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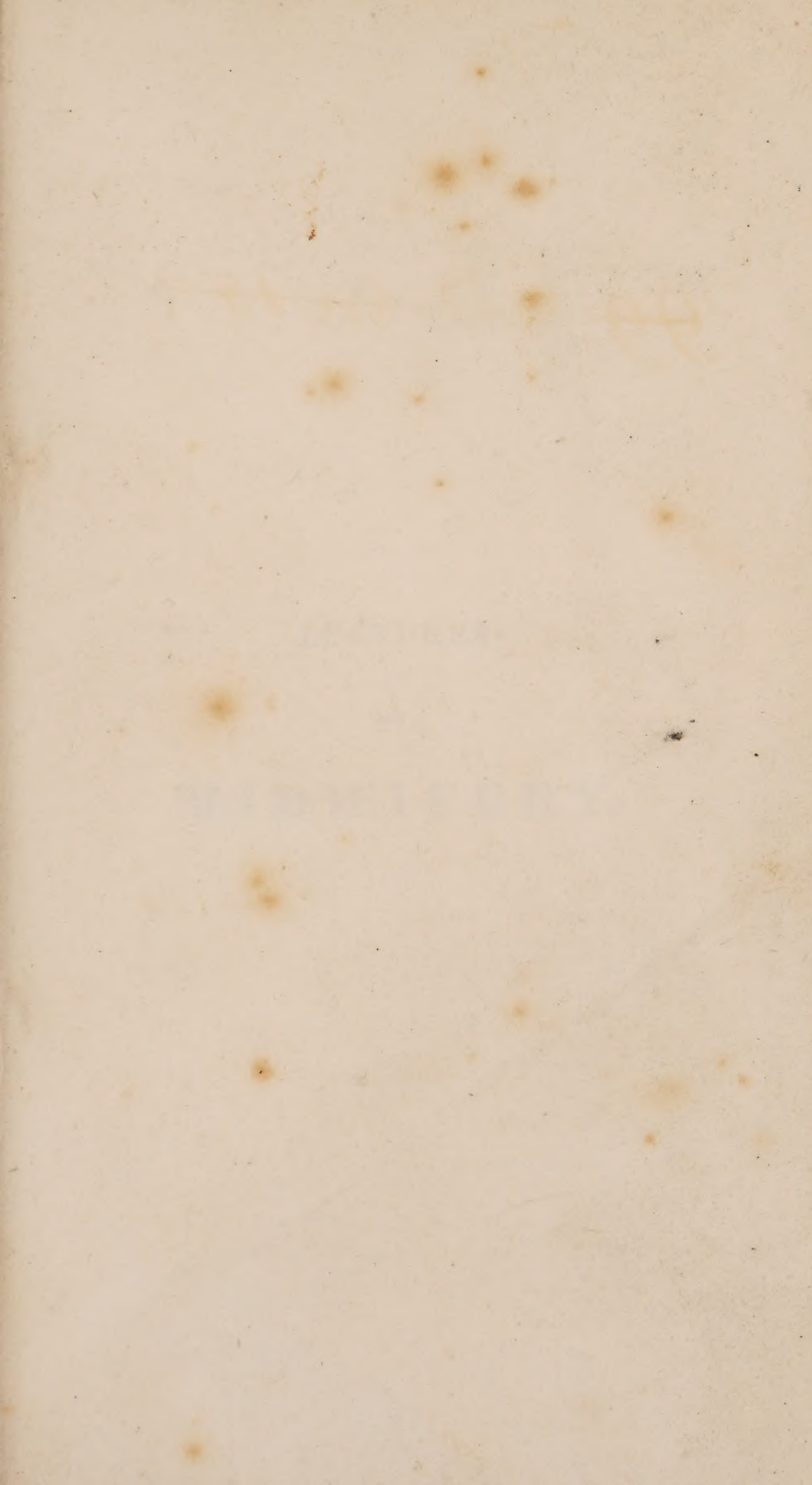
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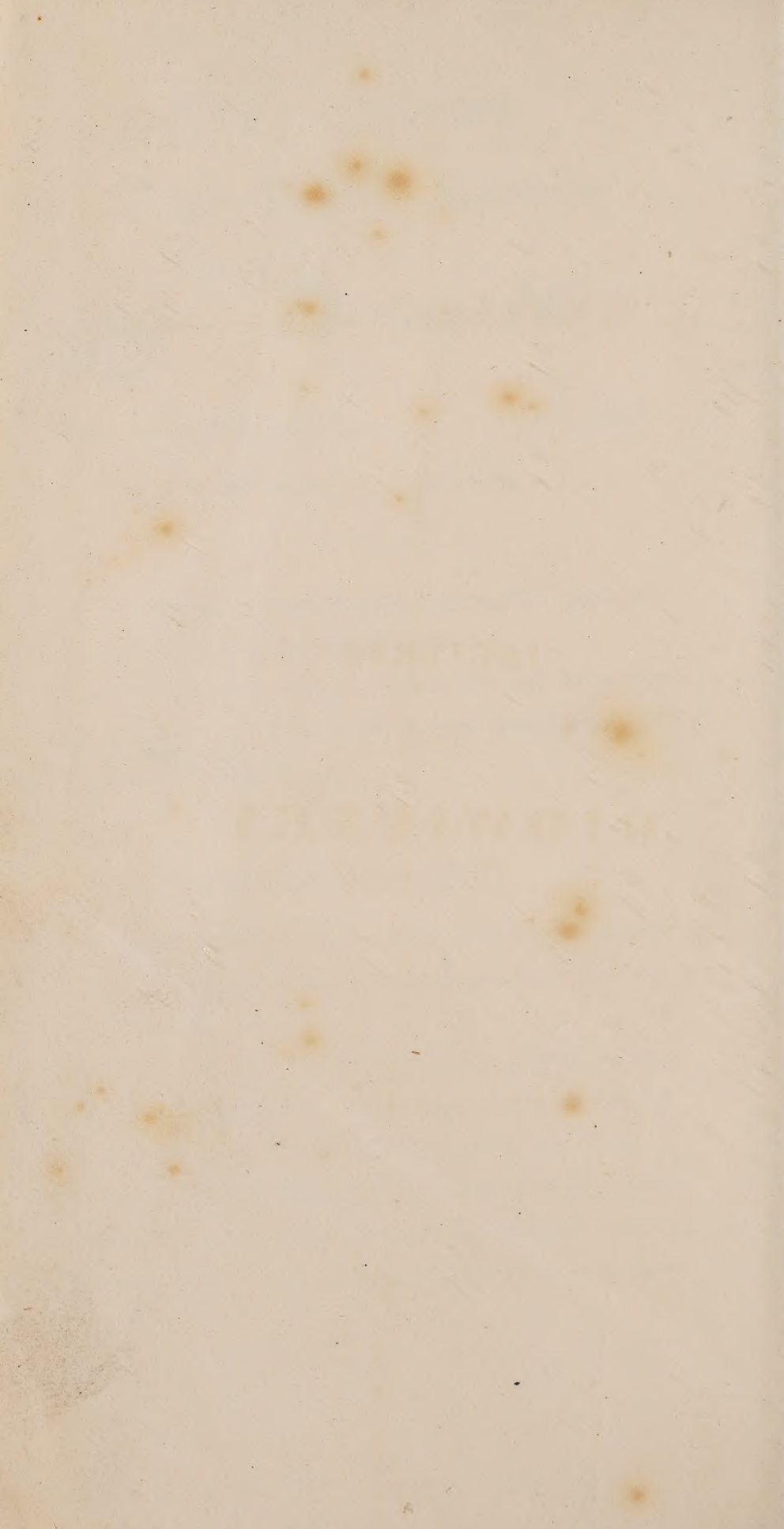
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LECTURES

ON

MIDWIFERY.



LECTURE
AND
DISCUSSION

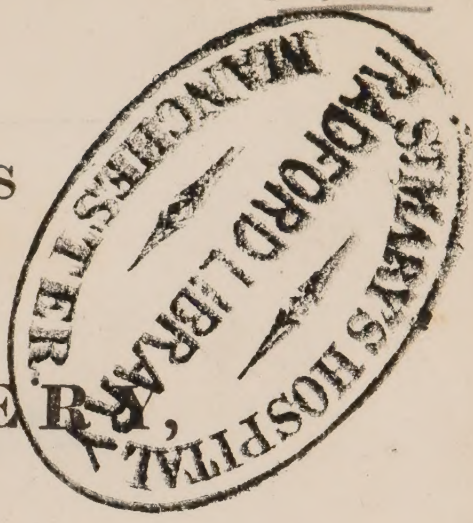
DISCUSSION

WOMEN ELECTED TO OFFICE

AND
LIBERTY

JAMES D. COOPER, JR.

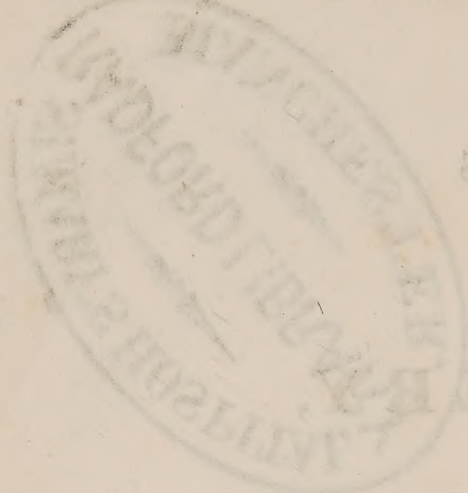
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LECTURES
ON
MIDWIFERY,
AND THE
DISEASES
OF
WOMEN AND CHILDREN;
AS DELIVERED
At Guy's Hospital,
BY
JAMES BLUNDELL, M.D.

LONDON:
PRINTED AND PUBLISHED BY FIELD AND BULL,
22, BLACKFRIARS ROAD.

1832.



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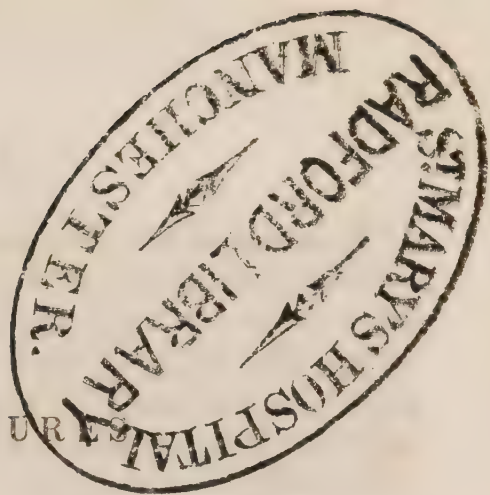
1871

P R E F A C E.

ACCORDING to the late regulations of the Worshipful Company of Apothecaries, the student (for whom this work is more especially intended) is required to attend to Anatomy at least one season before he attends Lectures on Midwifery; consequently, in that time he must be supposed to have acquired a competent knowledge of the anatomy of the female pelvis, and the parts connected with generation and parturition; the writer, therefore, has been more brief on that subject, to avoid causing any loss of time to the student; yet he hopes sufficiently diffuse to be readily understood. Although in small compass, the reader will find all the essential parts of the Doctor's invaluable Lectures.

PREFACE

According to the late regulations of the Worshipful Company of Apothecaries, the student for whom this work is more especially intended, is required to attend to Anatomy at least one session before he attends Lectures on Physiology; consequently, in that time he must be supposed to have acquired a competent knowledge of the anatomy of the human body, and the parts connected with generation and parturition; the writer therefore, has been more particular in that subject to avoid causing any loss of time to the student; yet he hopes sufficiently diffuse to be a really useful work. Although a small compass, the reader will find all the essential parts of the Doctor's valuable Lectures.



LECTURES

ON

MIDWIFERY, &c.

LECTURE I.

On the Pelvis. The Pelvis in childhood is composed of eight bones, but at the age of puberty of only four:—viz. the two Innominata, the Sacrum, and the Os Coccygis. The Sacrum is sometimes more hollow than natural, but that does not greatly hinder the birth of the child. Sometimes it is straight, still not greatly hindering the passage of the child. The Coccyx is sometimes ankylosed at right angles with the Sacrum, greatly narrowing the Pelvis, and causing much obstruction to the passage of the child's head through that cavity. This impediment is said to be sometimes overcome at the time of labour, by the force with which the child's head is propelled by the action of the Uterus, and with a noise loud enough to be heard distinctly. But if the efforts of the Uterus to expel the child fail to fracture the ankylosed joint, after giving a fair trial to the natural efforts, say twenty-four hours, or sooner, if there be any dangerous symptoms manifesting themselves, then the lever or the forceps may be tried, but very gently.

If these means fail, and you have waited, say thirty-six hours, or sooner, if the symptoms are urgent, you must proceed to open the head, and by that process relieve the patient. Sometimes there is *rigidity of the Coccygeal joint* ; generally, if not always attended with rigidity of the softer parts.

Treatment. You must endeavour by bleeding, ipecacuanah, fomentations, &c. to relax the parts generally, and the child may be expelled by the natural efforts ; but if you fail in this, and dangerous symptoms manifest themselves, the best practice will be at once to lay open the head. If you use the lever or forceps, ten to one but you lacerate or tear the softer parts. In this case also, you first give a fair trial to the natural efforts, say twenty-four or even thirty-six hours, if the symptoms admit. *The Coccygeal joint* may also be inflamed, from the pressure of the child's head, more particularly in delicate constitutions ; women with blue eyes, flaxen hair, thin skin, &c., or persons who show a scrophulous diathesis, or are of consumptive parents. It may be known by the patient complaining of the pain caused by sitting ; also if you press your fingers upon the part, pain is produced ; sometimes redness of the skin may be seen. The *Treatment* of this disease must consist of leeches frequently applied to the part, brisk purgatives, perfect rest, and the strictest antiphlogistic plan must be adopted ; bleeding from the arm, if the patient should be of a robust constitution, issues, blisters, &c. If the disease should go on to ulceration, and the bone become diseased, it might be proper for the perfect cure of this disease, to cut down and remove the Coccyx, and also the connecting part of the Sacrum, if involved in the disease ; but although I mention this, as yet it remains to be tried. The *Coccygeal joint* may be torn through, perhaps caus-

ing inconvenience on unloading the bowels ; it may be discovered by passing the finger up the rectum you can then press your finger between the ends of the bones. The *Treatment* would consist in keeping the patient in such a situation, that the Coccyx might unite in its proper position, and also to employ the antiphlogistic plan, if the symptoms required it. It is a disease, however, of very rare occurrence. In general, however, a considerable receding motion is connected with the Coccygeal joint ; when it is pressed by the child's head, occasioning considerable temporary enlargement of the inferior aperture of the Pelvis ; lateral motion is prevented by the insertion of the Coccygei Muscles, part of the Levatores Ani, and some portions of the sacro-sciatic ligaments into the sides of the Os Coccygis. The promontory of the Sacrum is formed by the junction of the last Lumbar Vertebra, with the upper part of the Sacrum. The *Ligaments* deserving the attention of the accoucheur, are the following : The Obturators, filling up the Obturator Foramen on each side ; in the fore and upper part of each is a hole for the passage of an artery, vein, and nerve. Sometimes this nerve is pressed upon by the child's head, causing cramp, which extends down the thigh. Two pair of *Sacro-Sciatic Ligaments*, one external, and one internal. In difficult parturition, these ligaments are to be remembered, as in the presentation of the feet ; the child's head may lodge here ; the chin on one side, and the occiput on the other. The *Sacro-Spinal Ligaments* are not connected with Parturition. We have also deserving of attention, the Symphysis Pubis, the Sacro-coccygeal joint which has been spoken of, and the Sacro-Iliac Synchronosis. The *Symphysis Pubis* is united by ligaments, thin internally, and thick and strong externally, constituting the strength of the joint. This

joint is liable to relaxation, generally coming on in the latter months of pregnancy, or after delivery. The patient complains to you of great weakness of the parts about the Pelvis; she says she cannot stand up, or walk, without feeling as if she were falling to pieces. You examine, you find no numbness, no want of power in the lower limbs; and if you place both hands on the Pelvis, one on each side, and press them together, at the same time desiring your patient to stand up, she expresses great relief: leave off the pressure, the disease returns again.

LECTURE II.

In the *Treatment* of the Disease spoken of yesterday, advantage is sometimes gained by sea-bathing, or plunging the hips into cold water; pure air, good food, tonic remedies, &c. The best mechanical means of relief is a bandage made to buckle in front, with slits at the sides for the hips, and there it must be laced so as to make it fit. In the extreme relaxation of years standing, it might perhaps be promptly cured by cutting down and dividing the symphysis. This might cause inflammation, perhaps a deposition of bony matter and ankylosis. *Inflammation of the Symphysis* may occur, sometimes from difficult parturition, or by closing a bottom drawer with one foot, or spontaneously. This disease may be mistaken for inflammation of the Bladder or Peritoneum. It may be known by the following symptoms:—redness and swelling of the part, acute pain, aggravated by pressure, by walking, or by any motion of the part. It causes fever, and the blood when drawn is cupped and buffed,

and without attention, the disease is not unlikely to terminate in abscess. The *Treatment* must be of the active kind ; take blood from the arm, if the patient be of a robust constitution, say to sixteen or twenty ounces ; apply leeches frequently, give brisk purgatives, digitalis and opium, if necessary. Use blisters, fomentations, &c.; keeping the parts perfectly at rest, and the patient on a low diet. It is highly desirable to avoid the formation of matter ; but sometimes in spite of all your remedies an abscess is formed ; you have then the pain changed from an acute to a dull pain, often attended with throbbing. You examine the part internally, for there the ligaments are thin, and the matter must be evacuated as soon as discovered ; you will sometimes have a patient of a scrophulous diathethis affected with chronic inflammation of this part ; you will find her complaining of pain and tenderness of the part, with a pulse from 100 to 110 in a minute, and a fever resembling hectic. From your remedies these symptoms subside, again come on, again subside ; finally, matter is formed. If not discovered, the constitution gives way, and if the patient be very delicate, she either dies, or the matter insinuates itself under the Periostium, continuing its course along the Pubis, until it arrives at the Acetabulum, forming a large abscess either near the hip, or makes its way nearer the surface to the fore and inner part of the thigh ; sometimes the matter bursts through the capsular ligament of the Symphysis at its inferior edge, or makes its way into the bladder. On dissection you generally find the Cartilage destroyed, and the ends of the bones ulcerated. The *Treatment* consists in applying leeches frequently, eight or ten at a time ; fomentations, and blisters ; in giving purgatives, diaphoretics, low diet, and lastly, in the use of issues or setons. The patient can rarely bear bleeding from the

arm. After the formation of matter, it might be proper for the cure of the disease, to cut down and remove the ends of the bones. *The Symphysis* is said to have been burst open, but it must be a disease of very rare occurrence. The *Treatment* would consist in keeping the ends of the bones in apposition by a bandage, and to subdue the inflammation; by local remedies as the spirit-wash, and leeches if necessary, keeping the patient perfectly quiet. The next joint, the Sacro-Iliac Synchronosis, is sometimes the subject of acute inflammation may be mistaken for Sciatica, but as the treatment is nearly similar in both diseases, it is not of particular consequence. The *Treatment* consists in bleeding from the arm, in applying leeches to the part, or cupping, in fomentations, blisters, issues, or the moxa; keeping the bowels free by brisk purgatives, and the patient on a low diet. The old writers affirmed that these joints gave way during parturition. Some moderns have denied this, but I think the human Pelvis is slightly relaxed during parturition; having examined the Pelves of several women who died of puerperal fever, and found more motion than in those who had not been lately delivered. It does occur in some animals, as the mole, cow, &c.

On the bony case of the Pelvis. There are five varieties; the large, the small, the slightly contracted, the contorted (in high degree), and the natural or standard Pelvis. The Pelvis may be divided into two parts, the true and the false, by the Linea Ilio Pectinea; the upper or false requires little attention from the accoucheur. The true or lower part, may be divided into three portions:—the brim, the cavity, and the outlet. The shape of the Pelvis is oval, its long measure from side to side, its short measure from before to behind; it is 5* inches from

* 5½ Burns.

side to side, 4 inches from behind to before, and $5\frac{1}{8}$ inches obliquely. The regularity of the oval is broken in upon by the promontory of the Sacrum.

LECTURE III.

We now resume the subject of our former meeting. The shape of the outlet is very irregular, it contains three notches, one particularly deserving attention.

The Arch of the Pubis when the ligaments are added, is of a quadrangular form; four inches from one Tuber Ischii to the other, and four inches from the Os Coccygis to the arch of the Pubis. The Os Coccygis by means of its joint is flexible, and may be pushed backward to at least an inch, making the measure from before backwards five inches; the measure of the outlet is from before to behind, and therefore it is to correspond with this that the head makes a turn in natural delivery, and in applying forceps to the sides of the head, this turn must be borne in mind, so that the long measure of the child's head be made to correspond with the outlet. In examining this cavity with an obstetric eye, we shall find it shallow in front, deep behind, and laterally of an immediate depth. A knowledge of this fact will be of great use in your examination of the internal parts of the Pelvis. The arch of the Pubis allows the head to lie bare; not so with regard to the other bones composing the Pelvis. *The hollow of the Sacrum* varies very much in different individuals, but where the Pelvis is large, and the child's head small, it is of no material consequence; but where the Pelvis is small, and the child's head large, the curvature of the Sacrum becomes of

great importance, by allowing the face to rest in it, while the Occiput is getting under the arch of the Pubis. The large cavity of the outlet facilitates delivery by letting the Occiput lie forth, or the face, if a face case; whence it is in common delivery that the head comes down thus, the Occiput in front, and the face in the hollow of the Sacrum. If obliged to use forceps, you avail yourselves of your knowledge of this turn; place the face in the hollow of the Sacrum, and the Occiput under the arch of the Pubis, and the head comes forth easily enough.

The *Axis of the Pelvis* is an imaginary line drawn from the navel to the Os Coccygis, with its convexity behind, and its concavity before. The channel being incurvated, the head corresponds accordingly; it first descends downwards and backwards, and then downwards and forwards. To feel the Os Uteri, you pass your finger upwards and backwards, and then upwards and forwards.

The *Distorted Pelvis* occurs from fracture, from Molles Ossium, or Rickets. As long as the distortion is confined to the false Pelvis, it is of no consequence. In the true Pelvis it may be divided into three kinds:—the angular, the elliptical, and a mixture of the two. The *angular* is formed by the approximation of the bones to each other: in the *elliptical* the brim is forced upon the back, the outlet nearer the Coccyx, and the lower extremity of the Sacrum is forced against the arch of the Pubis; it may be narrow at the brim, and large at the outlet, contracted on the right side, and not on the left; or *vice versa*. If a Pelvis be known to be greatly distorted, provided the woman has arrived at the full term of gestation, then there is no chance but the cæsarean operation, or craniotomy. If there be a clear channel from top to bottom, 3 inches in length, and $1\frac{3}{4}$ in breadth,

then she may be delivered by craniotomy ; but if on the contrary the length and breadth be less than the above, she has no chance but the cæsarean operation. In a patient with a Pelvis of this description, it would be my first endeavour to produce abortion in the early months by medicine ; if that failed, to pass an instrument, say a female sound, into the cavity of the Uterus per Vaginem, and break up the Ovum, and in that manner produce abortion. If I could not in any way find the Os Uteri, I would make an opening above the arch of the Pubis, and with a trocar and canula puncture the Uterus, and break down the Ovum ; but not stopping here, I would feel for the Fallopian Tubes, first on the right side and then on the left, and having drawn them to view, I would divide, and clip out a portion of each, say one-eighth or one-fourth of an inch, and by that means prevent the patient from future danger, by making her sterile. This, although she would be barren, would not take away the sexual passion. It is my opinion that it is absolutely necessary for the male semen to come in contact with the female rudiments before impregnation can take place ; therefore by removing a part of the Fallopian Tubes, you entirely remove the means of contact.

LECTURE IV.

We begin our remarks this morning, on the second variety of the Pelvis. *The narrow, or slightly contracted Pelvis* is most frequently met with in large towns, often from rickets in early life ; and this is the sort of Pelvis we most frequently meet with in prac-

tice. In general when coarctation exists, it is at the brim, and having a patient with a contracted Pelvis, and remembering this, you easily will find out the contraction. The sides may be pressed together, so as to shorten the measure of the Pelvis from side to side. The contraction may be produced from disease (Molles Ossium.) The weight of the trunk, acting upon the Pelvis as upon wax, presses it inwards; and the weight bearing also upon the lower extremities, the Acetabulæ are pressed inwards towards each other; and narrowing the brim is the result in nineteen cases out of twenty. You have contraction, from the approximation of the Promontory of the Sacrum to the Symphysis Pubis, by the pushing in of the Acetabulæ, and also by the approximation of the Ossa Ischia. The Pelvis may be contracted at the brim, and also at the outlet; but generally the outlet is wider, or quite natural; so that if the child's head can pass the brim, the delivery speedily and safely takes place. Where contraction exists, it of course causes danger and difficulty, more or less; but it by no means follows, that having a patient with a contracted Pelvis, you are obliged to have recourse to instruments. You may sit by the bed-side and watch your patient, the delivery goes on, and you have nothing to do but to receive the child. In contractions requiring the use of instruments, you must always contrive for the pains to assist you, or your instruments are of no avail. In these contracted Pelves, there are three modes of delivery:—first, the *natural efforts*, secondly, *Instruments*, as the lever or forceps; thirdly and lastly, *Embryotomy*. It has also been proposed to turn the child, and bring it away by the feet; I mention this, not to sanction, but to reprobate it; it seldom can do good, very often harm:—first, one of the evils is, that you have to carry your hand

into the Uterus ; secondly, you cannot turn without using considerable force ; thirdly, the muscles of the child's neck in these cases are so lax and tender, that in using the body as the handle, you run a risk of decapitating the head from the body. When it is known that a narrowing of the brim exists, by examination, or her having had children, say three or four born dead, or the practitioner has been obliged to have recourse to instruments ; in such a case as this, it will be much safer, more free from danger, and much easier for the patient, if parturition be brought on before the full term of nine months, say seven months and a fortnight, or eight months, according to the contraction known to exist. This has been tried, and with success. If you rupture the membranes, and bring on parturition before the full term of seven months, it is found that the child very rarely lives, not yet being strong enough to support life by nourishment ; but after that time it has a very good chance of doing well.

I shall now give you a rule how you are to manage these cases of contracted Pelves, when you are at the bed-side of the patient. If the woman has not been in labour twenty-four hours, after the discharge of the liquor Amnii, and no dangerous symptoms manifest themselves, you try the natural efforts still further ; empty the bowels by clysters, and the bladder by the catheter, if the natural efforts fail ; but if she has been in labour more than twenty-four hours, or if dangerous symptoms manifest themselves, then try the lever, or the forceps ; if they fail, and you have waited, say thirty-six hours, more or less, according to symptoms, then you must have recourse to the perforator. Sometimes the patient may be left to the natural efforts two or three days, but in

the majority of cases not ; in these cases too, the child is generally born dead, so that you feel less reluctance in the use of the perforator. *With respect to premature Parturition*, you would not be induced to attempt this in the case of the first child ; for if the case did ill, and the patient died, the friends of the patient might ask you why you did not leave her alone ? and perhaps you might find it difficult to give a satisfactory answer. But if she has had four or five children born dead, or if it had always been necessary in each case to embryotomize, then you are perfectly justified ; and if asked your reasons, you can say, I substituted a less danger for a greater ; I also endeavoured to save the life of the child, and that when the child was not at its full growth, there was less danger, and less pain to the mother, and a greater chance of life to the child.

The next variety is the small Pelvis. A patient with a small Pelvis is generally of a corresponding size, or very young, say, twelve or fourteen years of age. There is also this difference between the small and contracted Pelvis ; in the small, the child is generally of a proportionate size ; however, as there are exceptions to every general rule, so also to this. A woman may have a very small Pelvis, and a very large child, and indeed it is a well-known fact, that some men beget very large children, and the same holds good with respect to animals. I myself know a woman, not exceeding the ordinary stature, who is the mother of several children, one of whom to my own knowledge weighed eleven pounds at birth, and another near seventeen, although the average weight is seven pounds. *The Treatment*, the same as in the contracted Pelvis :—first, try the natural efforts, if they fail, then the lever or forceps ; if they, after having been skilfully yet gently used, fail, then em-

bryotomy, the last and most dreadful remedy must be had recourse to.

We are now come to another variety, *the large Pelvis*. A woman with a large Pelvis is liable from its great capacity to prolapsus uteri more or less; it may merely fall down into the vagina, or you may have it protruding at the os externum, or even lying forth between the thighs. Again, you may have retroversion of the uterus, to be afterwards spoken of. The common Pelvis is also liable to this disease, but much more rare. Again, you have to notice in the large Pelvis the very rapid expulsion of the foetus. It may drop from her in evacuating the contents of the bowels, in walking across the room, in crossing the street in haste, perhaps alarmed at the near and quick approach of some vehicle, in the jolting of a coach over a rough road, or perhaps, perfectly unconscious of any thing like labour, (it may be her first child) she feels an irritation of the bowels, very common just before the commencement of parturition; retires, and in making efforts, she is seized with a pain; before she can stir, another, and very likely a third in a minute after, and the child is born before she can stir from the place, or hardly be conscious of what is going forward. Dr. Lowder used to relate a case well illustrative of this point, in which a lady, (whom he had left only a very short time before without any pain whatever) in crossing her drawing room, was seized with a single pain, by which the foetus was expelled. It may be a subject of judicial inquiry, and you may be asked in a court of justice as to whether a woman may be delivered without her knowledge. I believe she may, where there is a large Pelvis, where the softer parts are relaxed, as from floodings or leucorrhæa; it is not unlikely but a very few pains will be required for the expulsion of

the foetus, and that she may be so crippled from the frequency of the pains, as not to be able to move from the spot. I will suppose that a woman unfortunately becomes the subject of an illegitimate pregnancy ; I will suppose farther, that from modesty, she is induced, without evil design, to delay the disclosure, till rendered inevitable by delivery ; well, suppose she is of lax fibre, with a large Pelvis, and feeling bowel irritation, she retires ; the uterus contracts—the foetus is precipitated, she hears no cry, and deems it lost ; she forms a resolution to be silent, and she thinks to hide her shame. But her reduced figure perhaps creates suspicion, the child is found, and she is committed to await her trial ;—then comes the question for the accoucheur, as to the possibility of the child being precipitated before the mother is aware. To this it may be replied, that if the Pelvis be large, the softer parts relaxed, it is not only possible, but very probable ; and if there be the least doubt on the subject, you will do right in giving your opinion for the woman.

LECTURE V.

You have several *other varieties of Pelves*, but they will require the same treatment as those I have mentioned. There is *the deep, the shallow, the heavy*, from the abundance of osseous matter, *and the light*, from a deficiency of it ; *the rough, the smooth, the wide*, from the spreading out of the ossa ilia, and *the shallow*, from their approximation to each other. These descriptions will be of little use, unless at the

bedside you know how to find them out for yourselves. Sometimes a woman will apply to you (perhaps she wants to marry) to know if her deformity will interfere with parturition; now, independently of internal examination, you may form some opinion from external observation. If she be straight, then no doubt but the Pelvis will be of proper size; if the spine be distorted, so in general will the Pelvis, more or less; but she may be distorted largely above the lumbar vertebræ, and the Pelvis be of the proper size; she may have the lateral curve to the right side or to the left, without the Pelvis being affected. But if she be very hollow in the loins, you must expect narrowing of the brim. If a woman has had several children, and all born dead, you may readily say what the cause is;—you may examine internally either with the finger or the pelvimeter; the finger will be found the readiest for measuring this cavity, to measure from side to side; you pass all your fingers per vaginam into the Pelvis, and then expand them, judging in that way of the width, and also if there be any angles. If you can expand your fingers, then the Pelvis will be natural in that direction. If you can place three or four of your fingers flat in the arch of the Pubis, all is right there, and by passing your fore finger upon the promontory of the sacrum, you find its length from before backward.

The Pelvimeter. An instrument invented by Coustonli, for measuring the Pelvis; it consists of two rods; one slides along the other in a groove; upon the superior rod there is a graduated scale of inches, and at each end is an upright. In fact, it resembles a shoemaker's last, which all of you have had opportunities of seeing. It is intended to measure internally; it may, however, be used externally, deducting six or eight lines for the Pubis. There is an instrument invented

by Baudelocque, recommended by some surgeons, resembling a pair of *calipers*. The method of using them is this :—you place one point on the symphysis pubis, and the other on the spinous process of the last lumbar vertebra, and on deducting three inches, you obtain the clear space between the sacrum and symphysis.

Another means is the child's head, if the woman has had children ; so, if you are called to a case of supposed narrowing of the Pelvis, front and back ; you ask her if her other children have been born alive, and if so, you infer that there is a sufficiency of room ; but if, on the other hand, the children were all born dead, or the former practitioner had been obliged to have recourse to instruments, then you infer that narrowing of the Pelvis exists. Again, if called to a labour where narrowing is supposed to exist, you will begin by inquiring how long she has been in labour after the discharge of the liquor amnii. If only three, six, or twelve hours, then be in no hurry. It may be from an unfavourable position of the child's head, or from its large size. But if she has been in strong labour, say twenty-four hours ; if the head be high, then contraction of the brim exists ; or what requires the same treatment, the head is too large.

Your next object is to feel for the promontory of the sacrum, to find if it be pushed in. When this is the case, and much pressure has been made upon it, it may be so swelled, that in a careless examination, you may mistake it for the child's head : indeed, I have heard of an omnipotent surgeon who actually pushed his perforator into it. If you cannot reach the promontory, without passing your finger very far back, if you have room for your closed hand, together with the thumb, between the promontory and symphysis, then there is plenty of room for the head to pass. If in reputed narrowing, where the woman

has been in labour for some time, you find on examination the child's head free from swelling; and if the parietal bones be not riding over each other, all is right; but if you find the contrary, narrowing exists. Lastly, if the child's head be low down, try to pass your fingers between it and the symphysis pubis; if you can do this, no narrowing exists. So that by these five indications the contractions of the Pelvis are known, by external examination, by the death of the former children, by the bones of the head being greatly compressed, and the scalp swelled, by your not being able to pass your fingers between the child's head, and the symphysis pubis, and by the patient having been in strong labour more than twenty-four hours without making any progress. Thus much then about the varieties of the Pelvis.

Difference between the Male and Female Pelvis.

In the male Pelvis there is a certain roughness, bulkiness, and weight, greatly differing from the light, smooth, and more elegant Pelvis of the female. The female Pelvis is larger in all its dimensions, except its height, than that of the male. The ossa ilia spread out wider, and thus the enlarged womb is better supported.—The brim of the female Pelvis is of a somewhat oval shape; more nearly circular in the male. The sacrum, and os coccygis are more curved in the female than the male; and the coccygeal joint is much more moveable in the female than the male. The notch of the ilium is larger in the female. The os sacrum is broader, and the distance between it and the symphysis pubis is greater in the female than the male.—Lastly, the junction between the ossa pubes forms an acute angle in the male, more obtuse in the female. In the female the tuberosities of the ossa ischii, the acetabulæ, and the

spinous processes of the ossa ilii are farther distant from each other; consequently their thigh bones are placed more obliquely than in the male.

On the Bearing of the Pelvis. The Pelvis is united to the spine at an obtuse angle. The Sacrum lies above and posteriorly, and the symphysis anteriorly and below. The uterus has a corresponding bearing, its mouth lying backwards, and its body towards the umbilicus. The bearing of the Pelvis is of consequence in retroversion of the uterus, a disease yet to be mentioned; for by placing the patient on her knees, the shoulders low, the breech raised, the uterus may fall back into its proper situation, remembering first to empty the bladder. Also in turning the fœtus, this bearing is of importance; as you must carry your hand upward and anteriorly, and not directly upward.

The make of the Child's Head, and its Passage through the Pelvis. The child may be divided into the arms, legs, trunk, and head. The shoulders may sometimes cause a little difficulty, but the head is of most importance—the shape of the head is oviform, similar to a hen's egg, and for the same reason, viz. its easy transmission through the Pelvis. The long measure of the child's head is from the vertex to the chin, measuring five and a quarter inches. The short measure from the protuberance of one parietal bone to the other, measuring three and a quarter inches. From the lower part of the occiput the lower part of the os frontis directly across is four and a quarter or half inches. But the principal thing to be remembered is, that the long measure is from before to behind, and the short one from side to side. The head of the adult is of a compact texture throughout, but in infants it is composed of several bones,

joined together by false sutures; and where there is a narrow Pelvis, these bones overlap each other, so as greatly to diminish the size of the head; and if time be allowed, the child will often pass without difficulty.

LECTURE VI.

Resuming the consideration of the head as far as regards parturition. Thus, when examining a face case, you feel the eyes, the nose, the mouth, the hair, &c. And here I would observe, you should accustom yourselves to the feel of the mouth by putting your finger into that opening whenever you have an opportunity; and on calling to see your patient, you may easily do this, without exciting any curiosity. The hair is not always a certain sign, as foetuses may be born bald. The eyes protrude much sometimes from the pressure of the head; so that in examining, you must be careful not to injure these organs. The nose is not a very good sign, for from pressure, as in a face case, the cheeks swell very much, so as to bury it; and in infancy this is not a very prominent organ—the mouth never fails you when you have once learnt to know it. The *sutures*, first the sagittal, which passes from the front of the head to the back, uniting the parietal bones. The *frontal*, a continuation of the sagittal to the nose. The *coronal* runs across the head, from one ear to the other, crossing the sagittal and frontal at right angles, connecting the os frontis with the parietal bones.

The *Lambdoidal*, so called from its resemblance to the Greek letter Δ , is situated just below the vertex,

and unites the occipital to the two parietal bones—and lastly, but of little consequence, are the *squamous*, which are situated on each side the head, uniting the petrous portions of the temporal bones with the parietal. These then are the sutures.

The Fontanells. The smaller is situated at the point of meeting between the lambdoidal and sagittal sutures; it is of a triangular shape, and has three sutures concurrent in it. The larger, situated at the point of union between the sagittal and frontal sutures on the one hand, and the two lateral portions of the coronal on the other, is of large size, rhomboidal shape, and has four sutures meeting there.

Deviations from the standard make of the Head. There is the small—the large—that altered by compression—by the death of the fœtus—by hydrocephalus—and lastly, an extraordinary make of the head. The *small head* causes no difficulty; with this labour is always easy. There are giants among fœtuses as well as men, and they are more common. The usual *weight of the fœtus* is from seven to eight pounds, but there are fœtuses which weigh twelve, fourteen, or even seventeen pounds. The *Treatment* of these will require the same rule as laid down in narrowing of the Pelvis; but as it cannot be heard too often, I will again repeat it—you first give a fair trial to the natural efforts, say twenty-four hours after the discharge of the liquor amnii, provided no dangerous symptoms manifest themselves; if after that time the natural efforts fail, and dangerous symptoms are beginning to appear, you must have recourse to instruments, as the lever, or the forceps; if they too, after having been skilfully applied, fail, then, after having waited thirty-six, or forty-eight hours, according to the urgency of the symptoms, the head making no progress, you are then, I con-

ceive, fully justified in having recourse to embryotomy.

Premature Ossification. This is generally from the time of gestation having been exceeded; and if the head be large, and the natural efforts fail, after having been fairly tried, embryotomy must be had recourse to. *The head may be altered from compression*, as in a face case and narrow Pelvis. The face in this case swells exceedingly, and when born, presents a frightful appearance, which however rapidly diminishes.—The Vertex may be compressed, and you may easily mistake it for the breech; for the scalp often swells exceedingly and the sutures are closed; but, if you press the swelled scalp firmly with the finger, you will feel the bones underneath; you may also feel the hair, both together hindering you from mistaking the case. You have compressed head also, from narrow Pelvis; this is of frequent occurrence; and that in which the aid of instruments is the most useful. The next variety is the *head altered by the death of the fœtus*. Where the fœtus has been dead for days in utero, or where it has died at the very commencement of labour, you will find it undergoes conspicuous and tangible changes. The brain is pulpified from putrefaction, the bones are detached from the scalp, and floating in the semi-fluid brain; large flakes of cuticle being detached, but this last is not always a certain sign; for I have had two cases, in which large masses of Cuticle came away, and yet the children were born alive. Neither must you infer the child to be dead because the bones are very loose; but if the bones of the skull feel like nut shells in a bag, then you may rest assured the child is dead.

Hydrocephalus may be either internal or external, or may be combined with spina bifida. You

find the head large, the sutures widely apart, often the distance of three fingers' breadth. You feel the fluid on pressing the sagittal suture, giving you the fluctuating feel of an abscess. The bones are very moveable, and you find the head does not descend by action of the uterus. *Treatment.* You must first try the natural efforts, and these heads being very yielding, often mould themselves so as to pass. They are sometimes burst open by the action of uterus. If the natural efforts fail, you may try the lever, or the forceps, but these instruments in these sort of heads are very apt to slip; so that, if the natural efforts fail, you must puncture the head.—A very small aperture is sufficient to evacuate the water, and the child may be born alive and recover; so that you will merely puncture, not tear open the head. I suspect rupture of the uterus chiefly occurs in heads of this kind; so that you would puncture the head sooner, more particularly if the woman complained of pain, as if the womb was giving way, or as if she were torn.

The last variety is that in which you have no brain, or upper bones of the scull; these cause no trouble, and the labour is easy; they sometimes subject the accoucheur to the unjust suspicion of having laid open the head; particularly if he happen not to have the confidence of the family.

The mode in which the child is passing through the Pelvis. First though, of presentation and situation. By *presentation* is understood that part you feel at the mouth of the womb in examining per vaginam; as the vertex, the face, arm, breech, or feet. By *situation*, is meant the position of the child, with regard to the bones of the Pelvis. Thus in a vertex presentation, one ear is situated on the symphysis pubis, and the other on the sacrum. The face on one side of the Pelvis, the occiput on the other.

LECTURE VII.

You have four presentations of the Child. These are the head, the breech, the feet, and the transverse, in which the child is lying across the mouth of the womb. Under one of these presentations, viz. the cephalic — the natural — the crural, or the transverse, the child must pass through the Pelvis; and of all these presentations, the cephalic is decidedly the most common; and of the part of the head which presents most frequently, and which forms the presentation in all ordinary labours, is the vertex, or that part of the summit around which the hair is curvilinearly ranged.

The Vertex Presentation. In this presentation, we find in the beginning of labour the face lying to one side, the occiput to the other, and the chin depressed on the chest, that is, the face is lying upon the sacroiliac synchondrosis, and the occiput towards the acetabulum. In consequence of the child lying in this manner, the long measure of the child's head corresponds to the long measure of the brim, which, as I before mentioned, is from side to side, and we also find, that by the chin being depressed upon the chest, we have the shortest of the three diameters of the head, viz. that which extends from the upper part of the forehead to the lower part of the occiput, to bear upon the long diameter of the brim, giving plenty of clear space, so as to allow the free passage of your fingers between it and the child's head, forming the most favourable position for the passage of the fœtus. When the head reaches the outlet of the Pelvis, we find it emerging under the following situation:—The vertex presenting, the occiput lies forth under

the arch of the Pubis, the face and forehead are deposited in the hollow of the sacrum, and on part of the os coccygis; the sagittal suture is situated on the perineum, or that portion of the softer parts which is interposed between the genital fissure and the anus. If you examine this position of the head at the outlet, in comparison with those properties of the inferior aperture which I have previously mentioned, you will find that nature, in an ordinary labour, places the head in that position most favourable for its passage. The face and forehead lying in the hollow of the sacrum, the occiput lying forth under the arch of the Pubis. The long diameter of the head corresponds with the long diameter of the outlet, which is between the Pubis and the coccyx, whence arises a great facility to the passage of the head. If the face had been to one side and the occiput to the other, difficulty must have arisen, for then the long measure of the child's head would have been opposed to the short measure of the outlet, and the passage have been thereby obstructed. It is clear, therefore, that when the head passes into the Pelvis, under the vertex presentation, that a turn is accomplished, pre-eminently called the *Turn*, and by this the occiput in the first part of labour on the side of the Pelvis, is carried forward under the arch of the Pubis. This turn is very quick in some cases, as where the Pelvis is large; and imperceptible in other cases, without you are constantly examining, from its slowness.

In using instruments, this turn must be borne in mind; for if in using the lever or the forceps, you only draw gently down, leaving the head to itself, this turn will take place without your help, even if you do not exactly happen to know the presentation. *The Bearing of the Child* is in the axis of the brim, that

is downward and backward, and downward and forward at the outlet. Thus much then about the common position of the head. Sometimes the vertex presents, but the face lies on the symphysis pubis all through the labour; and in consequence of this unfavourable position, no small danger may arise to both mother and child. You have the long measure of the child's head applied to the short measure of the brim. If the head be large, or the pelvis small, it cannot pass without being reduced in size; and even where the head is small, and the pelvis more capacious, it is not without strong uterine effort, and severe pains that the child descends. The bladder and rectum suffer greatly from pressure; the face presents at the arch of the pubis, but cannot protrude; and the occiput is resting on and violently stretching the perineum, which, without you are extremely careful, will be lacerated.

Treatment. You may turn by passing your hand into the uterus, laying hold of the feet, and in that manner effect the delivery. But as you have to carry your hand into the uterus, at the danger of bruising and lacerating the vagina, and this you may soon do, more particularly if your hand be large, and you are not gentle, for its thickness does not exceed that of brown paper doubled; without you have had considerable experience, I am decidedly averse to this method. I will not say it is never necessary—but without the softer parts are lax, the pelvis capacious, and you have acquired dexterity from long practice, that you can easily introduce your hand into the uterus, lay hold of the feet, and bring away the child with facility, by the operation of turning; under such circumstances, I will not say that now and then you may not be justified in so doing, but in general I would reprobate it in the

strongest language, for you are needlessly carrying your hand into the uterus; you are in danger of contusing or tearing the vagina; and till you have acquired a dexterous use of the fingers, you will frequently be deceived when endeavouring to ascertain the situation.

Secondly. If the softer parts are lax, and the head be above the brim, you may endeavour to rectify it with your hand, by laying hold of it as you would any other body, and gently, and with great caution, turn the face, which is in front, to the side of the pelvis. Also by means of the lever, or forceps, you may endeavour to rectify the position; remembering, however, that you are operating with instruments, possessing no feeling upon parts very delicate and highly sensitive; and having placed the face in the side of the pelvis, you may, as the pains assist you, gently and gradually place it in the hollow of the sacrum.]

Thirdly. When the face lies forward, and the head has descended into the cavity of the pelvis, with two fingers placed on the sides of the head, as near the cheeks as may be, you press the head into its proper position by little and little, only using your pressure when the womb assists you. But suppose the means I have enumerated fail you, it follows not that you may have difficulty. You may sit by the bed-side, put your hands in your pockets, and wait patiently, remembering a meddling midwifery is bad midwifery. You will feel the pulse occasionally; if not above 100 or 105 between pains, then there is no fear. But if, after trying all the means above enumerated, and without success; if, after having given a fair trial to the natural efforts dangerous symptoms come on, then embryotomize—the old rule holds good here.

The Face Presentation.—In examining you feel the eyes, the nose, and mouth. The chin is placed to one side of the pelvis, and the occiput to the other. As the labour advances, the chin comes under the arch of the pubis, the occiput in the hollow of the sacrum. The head is advanced thus far by the continuance of the pains; and the occiput being gradually pushed out from the hollow of the sacrum, the head comes into the world; the perineum being put dreadfully on the stretch, so that there is great danger of its being torn, without you are very careful to guard it. *Treatment.* Shall you turn? Why, as an exception to a general rule, perhaps this method of delivery may be proper. If you are skilful, confident, and judicious, if the pelvis be large, and the softer parts lax, you may pass your hand into the uterus, lay hold of the feet, and bring away the child by the crural presentation. But in ninety-nine cases out of a hundred, this will be unnecessary. It is the same with regard to rectification; if the pelvis be large, the softer parts lax, and your fingers very adroit; under such circumstances, you may venture to introduce the hand for the purpose of rectifying the head; an operation sometimes accomplished easily while the head lies at the brim. In these cases, using either the fingers or the lever, you change the facial into a vertex presentation. If, however, from the largeness of the head, or the smallness of the pelvis, you fail in this, you will still give a fair trial to the natural efforts according to the rule I formerly mentioned; and if after a fair trial, the natural efforts fail; if also the forceps, after having been gently and skilfully applied, also fail you; if the pulse rise, say to 130 or 140 in a minute, and other dangerous symptoms are manifesting themselves, then embryo-

tomize ; and the head having been thus lessened, passes easily enough.

The Forehead Presentation. We sometimes find the forehead lying over the centre of the pelvis, instead of the face ; this, however, rarely occasions any difficulty, for after a few pains the head changes somewhat—either the vertex or the face descends, requiring the same management as spoken of in those cases. We sometimes meet with *ear* presentations, but so rare, and so easily treated, that I forbear to enlarge on them.

LECTURE VIII.

The Crural Presentation. By our Gallic neighbours the foot or crural presentation is divided into no less than six varieties ; but in practice, conveniently reduced to two kinds only ; viz., those in which the abdomen of the child is lying towards the abdomen of the mother ; and those in which the abdomen of the child is lying towards the back of the mother. The most simple is that in which the abdomen of the child is lying towards the back of the mother. In this case, the child passes the pelvis thus—under the strong action of the uterus, the legs are gradually pushed forth. As soon as the thighs come within reach the accoucher lays hold of them, by means of a napkin, and draws gently down, co-operating with the pains, if there be any ; if not, he yet draws gently down, downward and backward in the axis of the brim ; for the chord suffers pressure, and therefore the delivery must be accomplished as soon as it can with safety.—When the breech is passing, be careful to guard the

perineum to prevent laceration. As soon as the breech is abstracted, and the abdomen begins to appear, lay hold of the umbilical chord and draw it forth a little to prevent its extension during the further abstraction of the child. During the passage of the thorax, lay your finger in the side of the pelvis; and if you feel an arm disposed to come down, draw it forth, or it may form an angle and lodge against the brim of the pelvis: in general the arms do not descend so as to require this. When the auxillæ approach you must be careful to prevent the arms from getting impacted between the front of the pelvis and the child's head; this you will prevent by passing up your fingers and getting a bearing on the arms; you push them as much as may be upon the back of the pelvis towards the face of the child; and having drawn down the auxillæ to a level with the outlet, you throw the body of the fœtus to one side, so as to favor the descent of the arm, and then placing two fingers or all, if possible, in the bend of the elbow, draw down first one arm and then the other; the head generally descends without farther difficulty. But should the child's head be large, or the pelvis small, it may be necessary to place the face to one side of the pelvis, and the occiput to the other, so as to make the long measure of each correspond, and gradually placing the face in the hollow of the sacrum, and the occiput under the arch of the pubis, drawing gently down in the axis of the brim, and at the same time guarding the perineum, you complete the delivery. The other variety is that in which the abdomen of the child is lying towards the abdomen of the mother. You let the legs protrude, and proceed with the breech as before directed, and having drawn the auxillæ to a level with the outlet, you proceed to extract the arms, placing the body of the child to one side as much as

possible, and with your fingers in the bend of the elbow you bring the arm over the face with a kind of sweep, and having got one out, you proceed in the same manner with the other. You may rectify the position of the head if you can, by placing the face to one side, and the occiput to the other, as in the preceding case; if you fail, draw the chin upon the chest, and notwithstanding the long measure of the child's head is opposed to the short measure of the brim, yet it is the shortest of the long measures, and comes forth, perhaps without much difficulty. A second, and perhaps better way, is to grasp the thighs of the child with one hand, and with the other to turn the belly of the child to the back of the mother, and in that way making the case lately described.

The proper moment as to when our assistance is to be given has been a serious consideration with various practitioners; and rules have been laid down accordingly. Some judge of the proper time by the laxity of the parts; others again, as Denman, ascertain the proper time for interfering, by the descent of the child. If the breech be at the outlet, they deliver; if at the brim, they wait; for there the chord does not suffer pressure, and the life of the child is in no danger. Others again judge by the state of the umbilical chord. If the chord pulsates strongly, they let the labour proceed without interfering; for as long as the heart beats strongly, the child is in no danger; but if, on the contrary, the pulsation of the chord be weak or suspended, they then endeavour to abstract the fœtus as promptly as may be, unless they believe it to be lost beyond recovery. For myself, I am accustomed in practice to combine these rules, and to act from a combination of all. I never deliver if the softer parts are rigid, and the

os uteri little expanded ; but if, on the contrary, the softer parts are lax, and the os uteri is dilated to the size of a crown piece, I then think myself justified in assisting delivery. But at the same time trusting to the natural efforts ; waiting, as Denman advises, till the breech is pushed down towards the outlet, and the chord becomes compressed ; and then with the softer parts lax, and the breech at the outlet, I proceed with the delivery, advancing more or less quick, according as I find the chord pulsate ; if it beat strong, I then let the labour proceed gradual ; but if the pulse fail, then with more rapidity, at the same time remembering that the safety of the mother is ever paramount to that of the child ; and therefore that the birth must not be accelerated more than the softer parts can bear.

The Breech Presentations. These are of two kinds, viz. that in which the abdomen of the child is lying towards the back of the mother ; and that in which the abdomen of the child corresponds to the abdomen of the mother.

First, *the presentation of the breech, with the abdomen of the child on the back of the mother.* The breech is pushed down by the natural efforts ; when it is at the outlet, you grasp it between your finger and thumb, and gently co-operating with the pains, you by pushing the breech from side to side, at the same time watching the perineum, find that it gradually descends, and the legs either drop forth of themselves, or with very little assistance. You have now got a foot case previously described, and must proceed accordingly.

Abdomen Anteriorly. Here the abdomen of the child lies in front all through the labour ; and if you allow time, the natural efforts will push down the breech, though perhaps not so speedily as in the preceding case ; you then with your thumb and finger

grasp the nates and proceed as before. You then get a foot presentation, to be treated in the same manner already mentioned. There is another means of effecting delivery, which is, to turn by the breech when it has arrived at the outlet, or wait till the legs come forth, and then by grasping the hips with one hand, and spreading the other on the back, you may, by the co-operation of the two, effect the necessary movement; I think this last mode the best. Sometimes the breech wont descend without your assistance; this you render in the first place by means of one or more fingers placed in the bend of the thigh; you draw down as with a hook, first on one side and then on the other, till the legs come forth. Secondly. By means of a fillet or handkerchief placed neatly in the bend of each thigh, you acquire a firm and safe hold, and may extract with much effect during each pain. Thirdly. The blunt hook may be used for the same purpose, but it is iron, and for that reason I am averse to it; it possesses no feeling for either mother or child. It may be used however in some cases with advantage, taking care to conduct the instrument over the bend of the thigh with your finger, so that the thigh may be in the concavity of the hook, and not under the point of the instrument. Fourthly. By means of the forceps you may assist in the descent of the breech; taking care, however, to apply them with gentleness; if they slip, there is no harm done; apply them again and again, if necessary, till by perseverance you bring the breech to the outlet. Fifthly. If a narrow pelvis and the breech cannot descend by any of these methods, you may pass your hand into the pelvis, and draw down the child's legs, and instead of a breech, you have a foot case. But I would have you aware of the fact, that more children are born dead in feet presentations than in those of the breech; and

the reason is this :—the chord is protected between the child's thighs and abdomen, in breech, and not in feet cases.

LECTURE IX.

The Transverse Presentations. Where neither the superior nor inferior extremity presents, the child is said to lie across the pelvis, you may have the arm, the shoulder, the hip, the back, the abdomen, or the chest, the presenting part. In these cases, if the fœtus be not above six months, then it may come away by the natural efforts. After that time it may be expelled by the natural efforts in another mode, by what is called the spontaneous evolution by Denman, (to be afterwards described ;) but this never occurs without the fœtus is dead, or nearly so, for then the body is lax and flexible. The most common mode of delivery is by the operation of turning ; sometimes, however, not very easy of accomplishment. This you may perform in two ways, viz :—by the breech or the feet ; the ancients used to turn by the head, but you will find this a very laborious task. If the hip should be the presenting part, perhaps you might get down the breech by one or more fingers passed into the bend of the thigh, when you might not be able to reach the feet. The most common of all the transverse presentations you are likely to meet with in practice, is that of the arm ; and your best practice will be to rectify the position by the operation of turning, and that too as soon as may be with safety, this being an exception to the rule for labours in general. When you have a

presentation of the arm or shoulder, and turning is absolutely necessary, the sooner you operate the better ; for by delay, the womb may contract so as to render turning impracticable, without using unwarrantable force. As soon therefore as the softer parts are lax, and the os uteri dilated to the size of a crown-piece, you will take off your coat, turn up the sleeve of your shirt, and having well lubricated all the parts of the hand and arm, except the palm, with lard or oil, you carry the hand into the uterus, and with gentleness lay hold of the feet of the child and draw down, taking care always to perform the operation before the water is discharged, or at all events before it has been long discharged ; and then, from my own experience, I think I may say that the operation may be effected without difficulty. These rules will be of little use however without you carry them with you to the bed-side of the patient.

Means of ascertaining the Position of the Child.
Having concluded our observations on the various modes in which the foetus passes through the pelvis, we now come to treat of the means whereby, at the bedside of the living woman, we may ascertain the mode in which the child is descending ; for it is evident that all speculative knowledge respecting the passage of the foetus can avail but little in practice, unless you can at the bed-side of the patient determine in what manner the foetus is coming away. The ancients used to endeavour to make out the position of the foetus by external examination ; but you cannot presume much on this mode, although I would not have you entirely neglect it ; for, by emptying the bladder, if necessary, and placing the woman in a recumbent position, with the shoulders and legs a little raised, to relax the abdominal muscles, you may, by carrying your hand over the abdomen, form an

opinion as to the shape of the womb, and the position of the child in it. More certainly, and with greater ease, modern accoucheurs ascertain the position by internal examination, or *examination*, as it is called ; that is, by touching those parts within reach of the fingers. When the vertex presents, it may be known by its hardness, roundness, its sutures, its two fontanel, and often by a copious growth of hair. When the head becomes compressed from pressure, it then feels round and soft like the breech, but by pressing you finger firmly on the swelling, you feel the bones and sutures underneath. If you feel the large fontanel, which is known by having four sutures meeting in it, and by its being of a rhomboidal shape, and large size, lying to the left of the pelvis, then the face will be to the left. If you feel the lesser fontanel to the right, known by being of a triangular shape and small size, having three sutures concurrent, then that is the situation of the occiput. If you feel the ear above the pubis, then you know the other is towards the sacrum. In ordinary deliveries these nice examinations are not required ; but in cases of difficulty these points should be ascertained, if practicable, as without this knowledge, a dexterous and scientific assistance cannot be administered.

In a presentation of the face, you will not, I hope, as has been done, mistake it for the breech. It may be known by its roundness and softness ; by the eyes, the nose, and above all, when once known, by the mouth. Having found out the presentation, you also know the situation ; the forehead presentation is the most likely to be mistaken for the vertex, but may be known by tracing the coronal suture, ending in the greater fontanel at one extremity, and the nose and eyes at the other. The breech may be known by its roundness, softness, the cleft between the buttocks,

the anus, the genitals, and perhaps the fingers, are stained with meconium. The feet are easily known, and hardly possible to be confounded with the arms, but I have heard of such feats. The shoulder may be mistaken for the breech, or the vertex; it is, if not swelled, hard and round; from the efforts of the uterus it becomes swelled; it is then soft and round like the breech; you, however, by careful examination, feel the scapula, the auxilla, the ribs, and a portion of the arm; and if you can without danger bring down the hand, it clears the matter at once, and also points out the situation of the child, which, as you in this case have to turn as speedily as you can with safety, is of consequence. Place the protruding hand palm upwards; if the thumb be to the right side, then the head is to the right; if the little finger be to the left, so are the feet, which you may then lay hold of without having to search for them in the uterine cavity. On examining, however, you will find some women so irritable and tender, as not to be able to lie still. In these cases, when you find that she flinches when you touch her, desist; take away blood from the arm, foment the parts, give a large dose of opium, say sixty or eighty drops of the tincture, and in the course of half or three-quarters of an hour, when you examine again, you find no difficulty. The left hand will be found the most convenient for examination, although I would recommend you to use both, for you may have cases in which the use of both sets of fingers will be necessary. Some introduce the whole hand when examining, but I would advise you to use only the two first fingers. In examination, let the woman lie on her left side, close to the edge of the bed, the thighs bent upon the body, the knees bent, the legs backward, the feet against the bed-post, the shoulders forward, and approximating to-

wards the knees. Before proceeding to the consideration of the softer parts in connection with the pelvis ; it may be proper to give a hasty sketch of the *reflection of the peritoneum within the pelvis*.

The peritoneum passing off from the recti muscles, gets upon the fundus of the bladder, leaving its anterior and upper part uncovered ; it then covers its posterior part, but not so far as the neck ; it then passes on to cover the anterior part of the uterus, and is expanded on each side of the pelvis, forming the anterior layer of the broad ligaments, leaving between the uterus and bladder a small pouch ; it then passes down, covering the fundus of the uterus, and posterior part of the vagina, forming the posterior layer of the broad ligaments, between the folds of which are placed the fallopian tubes and ovaria ; it then passes on to the anterior part of the rectum, leaving a second pouch between it and the uterus, and at the upper third of the rectum binds that intestine to the spine.

LECTURE IX.

On the softer parts in connection with the pelvis, and the effects that are produced on them by the passage of the child. Various soft parts are connected with the pelvis, some external, others internal ; and to these parts it is, as far as regards the accoucheur, that we are now to direct our attention, beginning with the *uterus*. In examining the uterus in different women, we find its size varies ; its size and figure may, however, be compared to that of a flattened

pear, it occupies the middle of the pelvis, and is placed with its fundus forwards, its mouth backwards, its anterior surface directed somewhat downwards, and its posterior surface looking upwards. On examining the womb at the end of the pregnancy, we find it bulky and occupying a large portion of the abdominal cavity; still, however, retaining the same bearing; the abdominal muscles are before it, the intestines situated above and behind it.

The *Bladder*, when contracted, is situated in the pelvis, but when full of urine, rises above the symphysis, and may often be felt forming a round fluctuating tumour in the abdomen. The thickness of the womb is various; in some cases, it is thick in some parts, very thin in others; in parts it may exceed half an inch in thickness, while in other parts it does not exceed that of double brown paper; its usual thickness is from a quarter to half an inch. On laying open the uterus, you find it contain the membranes, the water, the foetus, and a large lobulated fleshy mass called the placenta, which is adhering to the upper part of the uterus. The membranes are three, viz — the decidua, the chorion, and the amnion. If by any accident the placenta be torn from its attachment to the uterus, dangerous and repeated floodings occur.

The *Bladder*. Closely connected with the vagina and uterus is the bladder, and also well deserving the attention of the accoucheur. It is a musculo-membranous receptacle of ever-varying capacity; when contracted, it scarcely contains a drachm of urine, but under urinary obstruction, may contain from four to twelve pints, or even more; not, however, without danger of rupture. When dilated, it lodges as I have before mentioned, above the pubis, between the abdominal coverings and uterus; contracted, it sinks into the pelvis, and occupies but a small comparative

space; liable, however, to pressure, during the transmission of the child's head.

The *Ureters* open into the lower and back part of the bladder, but pierce its coats very obliquely.

The *Urethra* arising near the lower part of the front of the bladder, is from two to three inches in length, and is situated above the vagina, directly under the arch of the pubis.

The *Rectum* lies rather to the left of the promontory of the sacrum; it is placed against the back and mouth of the uterus, the middle and lower parts against the vagina. About two thirds of the rectum is covered by peritoneum, one third remaining uncovered, except by cellular membrane; during the passage of the child's head through the pelvis, it may press upon the lower part of the rectum, and paralyze the sphincter ani muscle, so as to destroy for a time the retentive power of the gut. The sphincter ani may be torn through, and when this occurs, the patient cannot retain the fœces, and it is liable to prolapsus ani.

The *Vagina* extends from around the mouth of the womb to the vulva; its length from four to five inches, it is narrower in front than behind; it lies in front of the rectum, its front upon the lower part of the urethra, and its upper portion upon the neck of the bladder; it is lined with a mucous membrane, and its thickness does not exceed that of double brown paper; it is easily lacerated. In the virgin state it is full of rugæ.

External Organs. First, the genital fissure, the sides of which are formed by doublings of skin, varying in bulk according to the quantity of cellular substance, and forming what are called the labia pudendi. Above the fissure is the mons veneris, an eminence covered by hair; below, extending from the genital fissure to the rectum, is the *perineum*, consisting ex-

ternally of common integuments ; when the perineum is torn through, the rent is narrow before and broad behind.

Vessels consisting of the external and internal iliac arteries, with their accompanying veins.

Lymphatics. I have known a large lymphatic gland situated in the back of the pelvis, impede labour ; this, however, is of rare occurrence.

Nerves. The anterior crural nerves situated in the false pelvis, are not very liable to compression, without the womb is very large. The obturators, situated in the true pelvis, are liable to pressure from the head of the child. The ischiatic lies upon the sacro-iliac synchondrosis, and is also liable to pressure.

Diseases of the parts about the pelvis, during and after Parturition. The *vulva* is liable to inflammation ; it may be from the rude introduction of the hand, from instruments, from the pressure of the child's head, or spontaneously. Your *Treatment* must consist of leeches about the symphysis pubis, fomentations, purging, &c.

The *Vagina* is liable to the formation of matter, that is, matter may form upon its surface ; you may have a formation of matter in the cellular web, situated about the vagina, bladder, &c. ; it may make its way into the rectum, the vagina, and in some rare cases, into the bladder itself. This formation of matter may come on soon after delivery, or it may be five or six weeks in forming ; if it be in considerable quantity, it is highly dangerous, more particularly if the patient be of a scrophulous habit ; in these hectic fever comes on, and terminates the patient's sufferings ; these formations however, are not frequent.

Slough and contusion of the vagina may occur from pressure, either in difficult labour from the pressure of the child's head, or from the improper use of in-

struments ; it may be the upper or back part of the vagina, or the external orifice ; if merely externally, it is of less importance. *Treatment.* You must apply linseed-meal poultices to the parts ; and the sloughs may be washed over with the oleum terebinthinæ. The upper part of the vagina may be torn into the rectum ; it may slough and communicate with the bladder, or the whole of the inner membrane of the vagina may slough away, and callosity of the part follow the injury. In such a case as this, if you find the vagina contracting, you must have recourse to sponge tents, &c. *Congestion* is sometimes observed about the rectum, perineum, and neighbouring parts ; independently of inflammation, they are of a brown, or dark red livid colour, but speedily recover themselves. It seems to me to arise from pressure on the veins about the neighbouring parts, particularly when there is rigidity of the os uteri. The *urine* may be obstructed from pressure on the urethra. The *urethra* may be inflamed or distorted ; you must, if possible, introduce the catheter, and draw off the urine ; and in this case you ought to deliver as soon as possible. Sometimes the patient cannot hold her urine from paralysis, caused from the pressure of the child's head on the urethra and bladder. On examining, you find no slough or inflammation ; the parts recover of themselves in a few weeks. You may have rupture of the back part of the *bladder*, from neglecting to empty it during labour ; in such a case, a catheter must be kept constantly in that cavity, so that the ruptured parts may lie in contact, and unite if possible ; you may have rupture of the bladder into the vagina, a very unfrequent case however, not one in a thousand. You may have incontinence of urine from sloughing of the bladder ; and in this case, the opening in the bladder never closes, You must keep a catheter constantly

in the bladder, and have a sheep's bladder or vessel of some kind, for the urine to collect in.

The Rectum may slough from pressure, and the fœces pass into the vagina, rendering the patient miserable for the rest of her life; the vagina is kept in a state of constant excoriation, from the irritation of the fœces.

Injuries of the Nerves. In these cases, the patient complains of numbness and loss of power, they are very slow in recovering themselves. In the passage of the child's head through the pelvis, the patient will often complain she has the cramp, or that one of her legs has no feeling in it, and she wants it rubbing; here you are satisfied of the cause, and as soon as the head comes down to the external parts, the pain ceases. *Slight cramps* after delivery are often followed by convulsions; in these cases you must watch your patient narrowly, and bleed if necessary. *Micturition* is very common in the beginning of labour; tenesmus at the latter end, from the child's head pressing on the rectum. When your patient complains of this, and wants you to leave the room for her to evacuate the bowels, it must induce you the more to remain, as the child will soon be born, and if you retired, the efforts to evacuate the bowels might expel the child, and rupture the perineum. I will again mention relaxations of the joints, as they are not uncommon, and may come on from easy as well as difficult labours. The diagnosis and treatment I have before given. The best means is pressure from a belt.

LECTURE X.

Delivery in all its varieties, beginning from the dilatation of the Os Uteri, and terminating in the expulsion of the Placenta. By natural labour, you are to understand labour from beginning to end, by the natural efforts, generally from six to twelve or twenty-four hours; but first I will make a few remarks on the conduct of the accoucheur. He must go as soon as sent for; if not, there may be violent flooding; the child may be born, and the perineum lacerated. I would advise you not to take instruments with you, without you know beforehand that it is a case of difficulty; instead of them, take the tracheal pipe, female catheter, tincture of opium, and some book on midwifery, say Ashwell's, and I would recommend you to read after coming away from a labour, to see if the rules laid down in the work be correct; and also, if you have committed any blunder that you may avoid it in future. I would advise you not to enter the room of the patient immediately you arrive, more particularly if you have come in the place of another, but ask the nurse how long she has been in labour; if the waters have broke, if the pulse is strong and regular; if she makes water frequently, if the bowels have been evacuated lately, and so on; if the pains be violent, no doubt but the patient will send for you, however great her aversion at first; if the labour be going on rapidly, you must stay by the bed-side; if slowly, you may go into an adjoining room, or leave the house, telling the nurse where you may be found. You must keep all quiet in the room of the patient, the nurse and a relative or friend of the patient being sufficient; take care

too that nothing be said but what will inspire the woman with confidence and give her courage. The room must not be over heated ; a small fire will be of service in ventilating the room ; a large one, such as you sometimes meet with, will do much harm. You may be asked by the nurse if the patient may lie down, or if she may walk about the room, and so on ; if the labour be going on but slowly, she may sit or walk, but if, on the contrary, it is going on very rapidly, or near the termination, you must let her lie down on the edge of the bed on her left side, the shoulders and knees approximating, and her feet against the bed-post. The Irish are delivered on the knees and elbows, as were their ancestors the Celts. The Germans sitting, and formerly this was the practice in this country. Now our women are delivered on the left side, and indeed in Europe generally. I would say, however, it would be better if they lay on the right, rather than the left side.

Guarding the Bed. This is done by a skin of red leather being placed under the patient's breech, and covered over by a sheet wrapped up into a number of folds ; this is prepared by the nurse, but it is as well for you to know it ; for it is a question put to you by the nurse, and to seem ignorant of it would lead her very likely to form but a poor opinion of your abilities. In examination you use only two fingers, and place your patient in the position I formerly described. Sometimes, however, you are called to cases of mere reputed labour, when in reality gestation is not begun. A gentleman once called on me, and not without earnestness, told me that he had under his care a case of labour, about which he was anxious. "The os uteri," said he, "is beginning to open, and I can feel the child, but the patient is weak, and the labour making little progress."

On enquiry, finding the delivery had not been protracted more than a few hours, and understanding there was no pressing symptom, I bid him wait, telling him that a meddling midwifery was bad, and that the powers of nature were not to be distrusted. A day or two after, he called again, saying his patient remained undelivered, and was much weaker, and ended by wishing me to visit her. I did so, and found the woman lying in state, with nurse, and all the paraphernalia attending delivery, wanting only one thing, and that was the child ; in fact, the woman was not pregnant ; in a few hours after she died, and on examining the abdomen, it was found full of water, but the womb clearly unimpregnated about the size of a flattened pear.* If, as it sometimes happens, you are called to these reputed cases, you may easily and without loss of time, detect them. First, by passing your hand over the abdomen ; if pregnant, you feel the uterus hard and solid, and can often distinguish the head of the child. Secondly, by internal examination, you pass one or two fingers into the mouth of the womb ; you feel the membranes charged with water,

* I myself know a case in which a poor woman had been increasing in size for several months, and had been attended by a practitioner, as a case of pregnancy. In the morning of the day she died, her pains were worse ; she thought she was in labour, and sent for the gentleman to attend her ; he came, staid a time, told her she was not bad enough yet, and that she must send again for him when worse. In the afternoon she died. In the post mortem examination, on tapping the body with the hand, a very evident fluctuation was perceived ; the peritoneum was found thickened, flakes of coagulable lymph were floating in the fluid of the abdomen ; the uterus clearly unimpregnated, and the abdomen containing a large bucket full of water.

and sometimes the presenting part. If you cannot pass your fingers into the os uteri, you may feel the child, if there be one, by passing the fingers between the symphysis pubis and uterus. Sometimes you are called upon when in fact labour has not begun. The patient being at the end of gestation, and feeling pain in the abdomen, expects she is in labour; it may, however, be spasmodic, inflammatory, or from the passage of gall stones. To decide in this case is a second duty that devolves on you. You must examine during pain, and if you find the os uteri slightly dilated, say as broad as a shilling, and then, on a second examination, after a succession of pains, as large as a crown piece, then you have a decisive proof that labour is going forward. Mere openness of the os uteri proves nothing. I have known, from personal experience, the mouth of the womb admit two fingers a fortnight before parturition commenced.* But if you have increasing dilatation of the os uteri, tension and relaxation of the membranes; or if, after the membranes are broken, you feel the head of the child advance and retreat according to the pains, by these signs you are certain parturition is going forward. *Presumptive signs* are cutting, grinding pains, sinking of the abdomen, and discharge of the show; a mucous discharge thrown out by the inner surface of the vagina, and tinged with blood. In the beginning of parturition you have micturition, irritation, and straining of the abdomen, and discharge of the

* I have experienced this in two cases, but not having heard or read of such cases, and at that time not having had the benefit of the Doctor's Lectures, I lost a night's rest in each case. One woman was delivered about a week, the other more than a fortnight after.

show ; the pains at first cutting and grinding, are in the back, and front of the abdomen, extending down the thighs, not always incessant, but returning at intervals. After a time the pains change, they become urging, bearing, forcing, and return with regularity every five or ten minutes ; you find the os uteri dilated, perhaps not more than the disc of a shilling, soon after as large as that of a half-crown, and so on increasing. The membranes now protrude, feeling, when the pain ceases, like a half charged bladder ; hard and tense, when the pain returns ; when the os uteri is fully dilated, they are broken by the natural efforts, and from half a pint to a pint or more of liquor amnii is discharged, generally in one gush. You in general have as many gushes as children, not always ; by the continuance of the pains, the head is pushed down, the face to one side of the pelvis, and the occiput to the other ; as the pains continue, gradually the face is pushed down into the hollow of the sacrum, the sagittal suture on the perineum, and the occiput under the arch of the pubis. When you have the face anterior all through the labour, the process is slower, and the perineum is put more upon the stretch, and requires you to be very careful in guarding it. Frequently, when the head is at the os externum, it advances with the pains, and recedes when they go off, and so on till by little and little the head comes forth. It is seldom necessary for you to assist the birth of the shoulders ; the uterus it is found contracts more kindly and effectually, and the placenta is more safely detached, and sometimes violent floodings follow the quick extraction of the shoulders ; a little blood sometimes comes gurgling away after the birth of the child, and also a little liquor amnii that has been detained. Some rupture the membranes as soon as they can, with the view of accelerating the

labour ; others leave them entirely to nature ; and I would, except in some rare cases, advise you to follow their practice.

You may however rupture them when the os uteri is fully dilated, and they are protruding towards the external parts : sometimes they are as tough and unyielding as a bullock's bladder, impeding labour, requiring their rupture, which may be done by pushing upwards when the pains are forcing against you, or if you do not succeed in this way, you may notch your nail and scratch through them. It is better not to use instruments for this purpose, for I have heard of a loaded bladder having been mistaken and punctured for the membranes. In early delivery, say six or seven months, the ovum may be expelled altogether, without you rupture the membranes, causing dangerous flooding, and the child may be drowned in the bag of water.

The Presentation is best made out when the os uteri is fully dilated, and the liquor amnii just discharged. The *early or false pains*, as they are called, I believe are caused by the dilatation of the os uteri, vagina, and external parts. The *urging, forcing, true labour pains*, are caused by the contraction of the uterus, the action of diaphragm, and the descent of the head. The *feeling of weakness*, or as if the back was dislocated, is caused by the slight relaxation of the sacro-iliac synchondrosis, and the pressure of the head upon the promontory of the sacrum. *Vomiting* sometimes comes on in the beginning of labour, but mostly ceases as it advances. You have cramp from the pressure of the child's head on the nerves, and as the head descends the worse it is ; you have micturition in the beginning of labour, tenesmus nearly at the end, from the pressure of the child's head, and not from the contents of the rectum.

LECTURE XI.

When the head is born, you must examine the neck, to see if it be surrounded by the umbilical chord, which is very common, perhaps as one in ten. It generally surrounds it only once, but in some cases several times. I have heard of its being six, or even seven times round the neck. The simplest and easiest method of detaching it is by placing a finger or two into the loop, to dilate it, you then depress the chin upon the chest, and slip the loop over the occiput; or if you cannot disengage the chord in this manner, you may slacken the folds, and let the body slip through. When the chord is several times round the neck, and you cannot disengage it, you must suffer the child to be born, keeping the abdomen of the child close to the genitals of the mother, when you can then unravel it with facility. Never draw the child far away from the genitals of the mother, for although the average length of the chord is about two feet, occasionally much longer; yet it occasionally happens that it is unusually short, and if you were to draw the child away in such a case, you pull also at the placenta; and if the womb were disposed to become inverted, this displacement might be produced, or the womb resisting the impulse, you might partially detach the placenta, and cause flooding, never without its dangers; so that to avoid these, always keep the child near the external parts, till you find the chord of sufficient length. It is also necessary for you to know when to tie the umbilical chord, and in what manner it is to be done. If the child breathe strongly; if it cry, and struggle, then you may tie it at once, but if it lie still, and appa-

rently dead, it is better not to tie it as long as the chord pulsates strongly, without you employ other means, as the warm bath, &c.

The mode of tying the umbilical chord is this. The nurse provides you with a ligature, made up of a number of threads of thread or silk, not less than twelve in number: you have two of these; the first you apply about two inches from the child's abdomen, wrap it round once and secure it with a single knot; apply it a second time the same, and when you have applied it the third time, secure it with a double knot. Be careful to tie it tight, more particularly if the chord be thick; about three fingers' breadth from the first, nearer the placenta, you apply the second, and with this you need not be so particular: then being provided with a sharp pair of scissars, you cut the chord between the two ligatures. In cutting the chord, you must take care you are not spirted over with blood, for the veins are often very full. It is usual to put a cap over the child's head, and you may do this, as it satisfies all around, they being afraid of the child taking cold. Here, then, ends your duty to the foetus; you deliver it over to some one ready to receive it; and the nurse then wraps up the naval in a scorched rag, and applies a bandage, washes and dresses it. You must now bind up the abdomen of the mother either with Gaitskell's bandage, or what is more common, with a napkin. But before you do this, always ascertain whether or not there be another foetus in the uterus, for it has repeatedly happened that the accoucheur has wished the patient joy, and had hardly crossed the threshold, before a second has made its appearance. Now in order to avoid so gross an error, you ought in all cases, as soon as the child is born, to ascertain if there

be a second. In general, on laying your hand above the symphysis, you will find the womb about the size of the head of the foetus, but if there be another child, you have the uterus large, as at the end of gestation, and on internal examination, you either feel the protruding membranes, or some parts of the child; having satisfied yourself that there is no other child in the uterus, you then proceed to bind up the abdomen; take a napkin, slide it under the patient's person, draw both ends together, and pin it tight, so as to give a feeling of agreeable support to the abdomen; you then apply a napkin between the thighs upon the genitals, and if she be very wet, or you wish her to lay some time, you may apply several napkins around the hips, &c.

After laborious labours, or in hysterical persons, they are often very languid; here you may give a cordial, say a dessert or table spoonful of rum, or any other spirit the patient prefers, a little sugar, and half a wine glass full of warm water; this you give the patient, who expresses great relief and comfort; and I, as a practical man, think it to be very serviceable; it helps to detach the placenta, and does not in the least induce to flooding. Sometimes your attention is called to the child, as being still-born; this is generally from one of three causes. First, a state of torpor, similar to that of a person hung; from the pressure of the umbilical chord this is the most common. Secondly, from pressure on the brain, as in narrow pelvis, causing apoplexy. Thirdly. Hemorrhage from the chord, and other causes. I have heard of the neck being dislocated; this is an hopeless case, and one which will not happen to you if you follow the gentle treatment laid down in the rules I have given you. Your remedies for restoring

animation are two, artificial respiration, and the warm bath.

First, *artificial respiration*. You introduce the fore finger of your left hand upon the root of the tongue into the rima glottidis; and this being open, you slide the tracheal pipe along it, till reaching the rima, you insert the tube the moment you withdraw the finger, and then feel in front of the neck, whether the instrument be lying in the larynx or œsophagus; you then apply the other end to your mouth, and breathe into the tube; then apply your hand on the chest and abdomen, and press downwards to expel the air, and so on for ten, twenty, forty, or sixty minutes, according to your success. You ought to breathe thirty or thirty-five times in the minute, the new-born infant breathing faster than the adult. In this operation, you should be seated with the child on your lap, or it may be done when the child is in the warm bath; it is necessary to introduce your finger first, as the trachea is often blocked up with mucous; this also shows that this secretion goes on during the foetal state. Pressure on the ribs is of no use, without you fill the lungs first; I once tried it for fifteen minutes, and on examining the lungs next day, not one cubic inch of air was contained in those organs; before the child has breathed, the lungs are as compact as the liver, and must be inflated to be of use. The *tracheal pipe* is an instrument of silver, curved and blunt at the end like a catheter, having two large holes at the sides near the end. During your efforts at resuscitation, if you observe the countenance brighten, the heart begin to beat, the chord to pulsate, and the child to sigh, you may stop a little; if it changes for the worse, you must proceed as before. In a rabbit, without either head or spinal

marrow, the heart continued to beat two or three hours by inflating the lungs. The *warm bath* is easily prepared, and whenever you expect a still-born child, always have a capacious vessel in readiness, a kettle full of boiling water by the fire, and a vessel full of cold water also ready. Mix the water so as to bring the temperature to 98 or 100° of Farenheit: this you may judge of by the hand; in this you immerse all the parts of the child but the face; if the child breathes better in the bath, keep it there, say twenty minutes; but if it only sigh, if the chord ceases beating, take it out and go on inflating, for the strong stimulus of the water exhausts the irritability of the child before the circulation is fully established. As an example, kittens drown sooner in warm than in cold water; and Sir Antony Carlisle tells us, a hedge hog may be resuscitated after being immersed in cold water thirty minutes, but cannot, after eight minutes immersion in moderately hot water. We are told to rub the child with mustard, to put pepper in its mouth, to give it spirit and water; if you do this, place the tracheal pipe into the œsophagus, and pass the spirit down the tube into the child's stomach from your mouth, as in this case it cannot swallow. You must be careful to wash the pipe and dry it before you use it again for the trachea. In pressure of the head, some bleed from the chord; if you think proper to do this, you take of the ligature from the chord, and if the blood don't flow, pass with great gentleness a blunt probe along the vein, say about an inch. I think, if you take away a tea spoonful of blood it will be sufficient.

On the Placenta. Sometimes a woman reposes for twenty minutes after the birth of the child; after this lapse of time you have a pain, not so severe, however,

as before ; and perhaps the placenta is pushed out altogether, sometimes into the vagina, or only partly out of the uterus ; sometimes you have more than one pain for the expulsion of the placenta ; when it comes away, you have a little blood comes gurgling with it. This pain or pains detaches the placenta, and further contracts the uterus ; it is quite as important the uterus should contract now as it was before ; it secures the patient against floodings, retroversion, &c. If the placenta adhere, wait for the pains to expel it ; you must not pull at the chord as if you had got hold of a bell rope, or you may find that you have turned the womb inside out.

LECTURE XII.

The uterus may be in various states of contraction after labourious or flooding labours ; it sometimes remains large, round, and soft, not easily distinguished from the abdominal coverings. Secondly, the uterus may be hard as the child's head, round, and firmly contracted. Thirdly, it may be large and soft as pulp at one time, and in a minute or two after firmly contracted ; this state of uterus you must carefully watch, for although the woman may be perfectly well, and without any symptom of danger, yet you must look on the condition of the patient as at best uncertain, till that firm, hard, and contracted state of the uterus be observed resembling the child's head. Fourthly, the womb may be contracted at first, and then large and soft from internal hemorrhage. The only secure state of uterus is that

in which it keeps constantly and firmly contracted. After the expulsion of the fœtus, it becomes of consideration as to the time when we may bring away the placenta; Hunter, Denman, and others, recommended the expulsion to be left to nature; this plan, however, has been fully tried, and not succeeded, for the placenta has been retained hours, nay days, according to Dr. Haighton, and dangerous floodings, and other evil consequences have been in many cases the result. Some say you are to assist in the removal of the placenta, if the natural efforts fail to do so in a given time, say four hours. Others again judge by the pains without any regard to the time elapsed since the expulsion of the fœtus; pains, they say, accompany the contractions, and the contractions of the womb expel the placenta; the pains therefore indicate the proper time for artificial assistance. Others again follow a different rule, judging by the situation of the viscus, without regard to the pains, or the time elapsed since the birth of the fœtus; if on examination they feel the fleshy part of the placenta lying in the upper part of the vagina, and through the os uteri, and more especially if they feel the insertion of the chord, they do not hesitate to remove it. If, on the other hand, the umbilical chord ascend high into the uterus, and no part of the placenta can be felt, they wait; others again judge by the contraction of the uterus. For my own part, I would advise you before you attempt to bring away the placenta, to feel if there be another child, and also if the womb be contracted; if you have waited half an hour and the womb be not contracted, wait longer, as you may with safety bring away the placenta after the contraction has taken place, but not without danger when uncontracted. If you

can feel the placenta lying as a fleshy mass in the vagina, if you can feel the insertion of the chord, you may also bring away the placenta ; the mode of doing this is to lay hold of the substance of the placenta with one hand and the umbilical chord with the other, and so gently and gradually wheedle it away ; as soon as you have got it away you must examine it to see that you have brought it all away, and that no part of the placenta or membranes be left in the uterus. You also examine to see that there be no inversion of the womb : if this should happen, it may be easily reduced at the moment, but would be unreduceable if not discovered until twenty-four hours after. If, however, you wait till the uterus be firmly contracted before you withdraw the placenta, this will never happen ; you also, by the firm contraction of the womb, secure the woman from all danger of uterine hemorrhage. The vessels of the uterus are very large and open, while the womb is uncontracted, but when the contrary takes place, they are closed by the contraction of the muscular fibres of the uterus, acting as natural ligatures to the open vessels. You may also have internal and external hemorrhage. The *external* one cannot be easily overlooked ; perhaps the patient complains to you, the blood is running from her, or you may hear it run on the floor in some cases. The *internal* may occur from a clot of blood blocking up the os uteri ; it is known by the large size and pulpy feel of the uterus ; and by the eruption of blood on its being compressed ; the woman sinks perhaps into a state of collapse. Also, if the woman be in the middle of a large bed, blood may collect in the centre without your knowledge ; if therefore your patient becomes faint, if the body become cold, if you have sighing or spasmodic breathing, examine

the uterus, and if there be no collection there, then examine the hollow of the bed, and you will very likely find a large pool of blood collected there. But if you examine the womb carefully after the expulsion of the placenta, and bind up the abdomen with sufficient firmness, this will rarely happen to you.

I will now mention some of the errors you are likely to fall into in early practice. You may forget to examine the abdomen, to ascertain if there be another child; you may have wished your patient well, and another child be born as soon as you have got well away; and as a general practice it is not proper to remove the placenta of the child already born until those remaining in the uterus have been expelled; rupture of the chord, suffocation of the remaining foetus, in consequence of the premature extraction of the placenta, perhaps common to both, not to mention those floodings hereafter to be spoken of, must in some cases ensue where this caution is unwisely neglected. Secondly. Bringing away the placenta without ascertaining whether the womb be contracted or not. Thirdly. In thrusting your hand needlessly into the cavity of the uterus. Fourthly. Tearing the placenta, and leaving a portion, sometimes a large one, behind in the uterus, giving rise to pain, vomiting, floodings, and a great deal of constitutional irritation, for all which symptoms you are unable to assign a satisfactory cause, till perhaps nine or ten days after the time of the accident the remaining portion of placenta is expelled; nay, sometimes the woman may die from this cause. To avoid this, always carefully examine the placenta as soon as expelled. Spread it out on a napkin, examine both surfaces, raise the membranes also, to see that no portion of them remain behind. Fifthly. Not binding up carefully the

abdomen of the patient, giving rise to external or internal hemorrhage. Sixthly. Inverting the uterus, and not discovering it until too late. If, however, you remember and practise the rules I have given you, you will, I am certain, avoid these errors.

I now pass on to say a few words on *lingering parturition*, the next common to the natural. Labour is sometimes protracted two or three days, more particularly in the case of the first child, from a deficiency of uterine pains, but these lingering cases, although wearisome to the patient, accoucheur, and all around, in general do very well. You must see the woman now and then, and keep her mind easy. If, however, the friends get anxious for you to accelerate the labour, or from various causes you deem it necessary to attempt this, you may let the woman stand or sit upright, which, according to Denman, has often had the effect of bringing on good pains. Sometimes you may succeed in arousing the dormant powers of the uterus by saline clysters made with an ounce of the sulphate of magnesia to a pint of gruel. Sometimes the deficiency of pain is from a want of energy, which may be caused by various depressing passions of the mind, as fear, grief, &c.; here you will endeavour to raise the courage of your patient, and you may allow her ale, wine, or spirit, according to her life and habits; opium may also be of service. If you give your assent to the patient taking spirit, and the nurses will frequently ask you if she may have some in her gruel, you will do well to taste it before it is given to the patient, as the nurses frequently exceed by much the quantity you deem sufficient. Sometimes it may be from the large quantity of liquor amnii producing too great a distension of the uterus. Here if the os uteri be fully dilated, and the softer

parts lax, you may rupture the membranes, and discharge the waters. Again, the *secale cornutum* may be found useful; it is said that more children are born dead under its use, than where it has not been administered; but a friend of mine tells me he has tried it in 150 cases, and only one of the children was born dead, and that was a case of narrow pelvis not fairly to be referred to the *secale*. Sometimes it fails altogether in exciting the pains, yet very often produces good effects; it may be administered in the form of decoction, made by taking two drachms of the *secale* in coarse powder, and boiling it with four ounces of water, till reduced to an ounce and a half; its dose is a table spoonful to be given every half hour, till the wished-for effect be produced; it in some cases excites vomiting. You may ask if manual exertions are to be looked to? Seldom; turning or the perforator are never to be thought of. The lever or the forceps, these I do allow if you are very skilful in their use, may be used in some rare cases; generally, however, by waiting patiently, giving time to the natural efforts by soothing the mind of the patient, by saline clysters, by the upright position, by giving ale or wine, (according to the habits of the patient;) if required, by rupturing the membranes, allowing first the full dilation of the os uteri and the relaxation of the softer parts. By the *secale cornutum*, these according to the cause inducing the delay, will seldom fail in exciting the uterus to expel its contents.

LECTURE XIII.

On Preternatural Parturition. Often occasioned by falls and other accidents; often the case in pre-

-mature parturition : indeed so common is it, that when called to these cases you ought always to expect it, and to make your investigations accordingly. In some women it is from idiosyncrasy ; others again have a natural and preternatural presentation alternately ; some women, when the child is lying preternatural, have peculiar feelings in the abdomen, which they had not in labours before natural. Sometimes the presentation is easily made out ; in other cases with more difficulty ; the best time for attempting this, is when the os uteri is fully dilated, the membranes broken, and the liquor amnii just discharged ; if at this time you examine with attention, you will generally succeed in making out the presenting part ; sometimes you may succeed in making out the presentation even before the rupture of the membranes, and the complete dilatation of the os uteri ; if you examine during the absence of pain, the membranes readily recede from the touch, although the os uteri is not expanded wider than the disc of a shilling, and I believe you may by one or two fingers passed into the os uteri discover the presenting part, but it is safer to refrain from examination at this time, lest you prematurely rupture the membranes. The foetuses are often still-born, not dead, in these cases, from the pressure of the umbilical chord ; but they are very often resuscitated, much more so than in cephalic presentations and narrow pelves. These labours may be divided into two kinds ; those in which the operation of turning is required, and those in which it is not. First then of the easiest cases, or those in which turning is not required. These consist principally of the presentations of the feet, the breech, and those of a mixed kind, partaking of the nature of both.

Foot, or Crural Presentations. The presentations of the feet are most common. In examining, you

must make out the position of the child, more particularly by the situation of the abdomen of the child with regard to the abdomen of the mother, for your treatment must vary according as the child's abdomen is lying front or back ; the back of the child lying on the abdomen of the mother is, as I mentioned in a preceding lecture, the easiest of the two ; when you have ascertained the feet to be the presenting parts, and also made out the situation of the child, you must next determine the proper moment when manual assistance is required, which is a point of great nicety and much more difficult than the operation itself. Different practitioners prescribe different rules ; some take their indications from the laxity of the softer parts, and the dilatation of the os uteri, and this rule is not to be despised, for in general when the os uteri is fully dilated, and the softer parts relaxed, the child under this presentation may safely be brought away. Hunter and Denman's rule was to deliver when the breech was at the outlet, and the umbilical chord suffering from pressure. While the breech remains above the brim the chord is free from pressure, but when the breech is pushed down to the outlet, the chord is liable to compression, and unless the child be promptly extracted, it will probably die suffocated ; if, however, the chord pulsate strongly, you may let the natural efforts push the breech even beyond the external parts ; or at all events, if you give assistance you will do so slowly and with gentleness ; if, on the contrary, you find the chord pulsate feebly, or cease altogether, you must then promptly bring away the foetus, for by delay the chord becomes firmly compressed, the circulation ceases, and the child perishes. For myself, however, as on a former occasion, I would recommend you not to take the indication of delivery from one of these circumstances only, but from a combination of them.

You must observe the elevation of the breech ; if above the brim, wait ; on the contrary, if the breech be at the outlet, and the softer parts fully relaxed, deliver. If, however, the breech be at the outlet, but the os uteri and softer parts are rigid, wait, lest you lacerate and bruise the softer parts ; or being possessed of a muscular arm, and acting on the dray horse principle, you drag the head from the body. On the other hand, if you find the softer parts lax, the os uteri fully dilated, and the breech at the outlet, you will feel the umbilical chord ; if it pulsate strongly, do not meddle, allow the breech to be pushed lower by the natural efforts, for that facilitates delivery ; but if on examining the chord, you find the pulsation interrupted, then it is clear that the action of the heart is disposed to cease, and the sooner the child is brought away without injury to the mother, the better.

The method of giving assistance in crural presentations is very simple, and by waiting for the proper time you will rarely meet with any difficulty. If the feet of the child present, and the abdomen is lying towards the back of the mother, and the breech at the outlet, or even beyond the external parts ; you may assist in the abstraction of the child by wrapping a napkin round the limbs to secure a firmer grasp ; having thus obtained a firm hold, you draw down, swaying the child from side to side, backward and forward, or in an oblique direction, according as one or other of these movements facilitates its descent, taking care however, in so doing, not to injure the perineum. When the trunk of the child is passing the pelvis, you may slide up one or two fingers, first on one side and then on the other, examining if either of the arms be disposed to descend with the body ; if so, you must take hold of the hand and draw the arm

forth, placing it flat against the side. This case seldom happens, but if it should, and you neglect it, the arm might start out at an angle over the brim of the pelvis, obstructing the descent of the child; or should the difficulty be borne down with impatience and violence, fracture and contusion might be produced. Further, when you are drawing the thorax through the cavity of the pelvis, again pass your fingers into the pelvis and feel for the arms, and to prevent them from becoming impacted between the occiput and symphysis, you must take care to press them as much as may be into the back of the pelvis; if you neglect this precaution, you may be from ten to twenty minutes in overcoming the obstruction; with this precaution then, having brought the auxillæ to a level with the outlet, and kept the arms in the back of the pelvis, you throw the body of the child out of your way, you pass all your fingers, if possible, into the bend of the elbow; you then bring down the arm resolutely, yet gently, with a sweep over the face; having got one arm down, you proceed in the same manner with the other; it matters not which arm you begin with, neither must you waste any time in hesitation, for while you are delaying, the child may be dying; be careful also to place your fingers in the bend of the elbow, for by obtaining the same bearing on the middle of the arm, you run great risk of fracture, the bones of infants being very fragile. After you have got the arms down, the head in general, if you have waited for the full dilatation of the os uteri, and the relaxation of the softer parts, causes no difficulty. As it descends you place the face to one side of the pelvis, and the occiput to the other; depress the chin upon the chest, by getting a bearing upwards on the occiput, with one or two fingers of one hand,

and depress the chin with the other ; having got the chin on the chest, you find that you have also got the short measure of the child's head opposed to the short measure of the brim ; you then draw down in the axis of the pelvis, swaying the head a little from before backwards, till it approach the outlet, when you must place the face in the hollow of the sacrum and the occiput of the pubis, taking care of the perineum ; you find the head come forth easily enough. You have also in crural presentations the abdomen lying in front. This may be treated in two ways ; first, in taking the case as you find it, but this is more dangerous and difficult than the other ; if, however, you practise this, you must proceed with the breech and arms as before mentioned, and when you have extracted the arms, you must depress the chin upon the chest ; by that means getting the shortest of the long measures, the head may be brought away ; but as the method I am now about to mention is both easy and safe, I would advise you to adopt it ; it consists in turning the abdomen of the child to the back of the mother, and the best time for doing this is when the thighs protrude, and the breech is just above the outlet. The method of accomplishing it is this :—you grasp the upper part of the thighs with the left hand, and with the right spread out on the back, you gradually, yet resolutely place the abdomen of the child in the back of the pelvis, at the same time avoiding any injury to the perineum. The errors you are liable to fall into are, First, mistaking the leg for the arm. Secondly. Abstracting the foetus without first ascertaining the proper time. Thirdly. Neglecting to turn the abdomen into the back of the pelvis. Fourthly. Forgetting to pass up your fingers into the pelvis, to ascertain if the arm be disposed to come down.

Fifthly. Allowing the head to become impacted by neglecting to place the arms in the back of the pelvis. Sixthly. In using too much force, and neglecting to get a bearing in the bend of the elbow, instead of which you place your fingers in the middle of the arm, to the great danger of fracture.

Breech Presentation. Known by its softness, roundness, the genitals, the anus, the cleft between the buttocks, a portion of the thighs, and often also by the meconium. Your best time for making out the presentation is when the os uteri is fully expanded, the membranes ruptured, and the waters just discharged; it may, however, be made out much earlier in the labour, when the os uteri is not dilated more than the disc of a shilling, but as it endangers the premature rupture of the membranes, I do not recommend it; here the old adage, "a meddlesome midwifery is bad," is equally applicable. You must not hastily infer manual interference to be necessary; sit by the bed-side, put your hands in your pockets, and wait patiently for the natural efforts to push the breech to the outlet, and then it is that your assistance becomes necessary, for now the chord is liable to pressure; therefore you grasp the hips, and by a backward and forward motion co-operating with the pains, the breech comes forth, and by carrying the back of the child towards the mons veneris, the legs drop forth of themselves, or with very little assistance. Sometimes the abdomen of the child is situated in front instead of behind; this you easily discover by the situation of the thighs and genitals, and this situation is to be corrected as soon as the nates come down to the outlet, by grasping the part, and by little and little transferring the child's abdomen to the back of the mother. The modes of giving assistance in the

passage of the breech, if deemed necessary, as from narrow pelvis, are the following :—First, the fingers. You pass one or two fingers into the bend of the thigh, and co-operate with the pains, drawing down first on one side and then on the other, till the passage of the breech be completed. Secondly, if you fail in this, you may use a handkerchief passed carefully into the bend of the thigh ; after you have passed it over the bend of the thigh, you take another and place it in the same manner over the other, by which means you get a complete command of the parts. A third means is the blunt hook passed under the direction of two fingers over the bend of the thigh, but I think you will find the handkerchief as serviceable, and far less dangerous. A fourth means is the forceps ; you pass one of the blades of this instrument over the flank of the child ; you then take the other blade and apply it to the opposite flank, securing the nates between the blades of the forceps. In using these instruments remember to use them with great gentleness, for if you do not, you are in danger of injuring the abdominal viscera and fracturing the bones of the pelvis. Lastly, if all these means fail, you may pass up your hand into the cavity of the uterus and lay hold of the feet, and make it a common foot case ; this, however, is rarely required, and the child is in less danger from pressure while the legs are in the abdomen than after they are brought forth. The errors to which you will be liable in these cases are, First, by careless examination mistaking the natal for the facial presentation. Secondly, in meddling before the proper time, as when the breech is at the brim, or in drawing down the legs without need, to the danger of the life of the child, also running a risk of lacerating the genitals of the mother.

Mixed presentation. You may only have one leg protrude ; this however, is uncommon, and requires the same treatment as in the breech case. Lastly, you may have the knees presenting, but here the legs soon come down, so that this case becomes crural, and requires the same treatment.

LECTURE XIV.

Sometimes in crural presentations you meet with difficulty in the passage of the abdomen, shoulders, or head. In some cases, you meet with a very large abdomen ; from the accumulation of water in the peritoneal sac, in various quantities, from a pint to a gallon, or more ; the bladder may also be greatly distended with fluid, containing two or three pints, of which I have a specimen. Here it very often happens that nature is quite sufficient for the expulsion of the fœtus ; if the pelvis be of the proper size, it may often pass easily enough ; nay even when the child is large, and the pelvis small, it moulds itself and passes without much difficulty ; you assist, gently co-operating with the pains, at the same time taking care of the perineum. If this, however, should not succeed, then the practice of British midwifery is to take care of the mother, let what will happen to the child, and you must puncture and let out the water, whether that fluid be collected in the bladder or peritoneum. You might attempt to pass a catheter into the bladder, more particularly if it be a female child, to find if the water lodged in that cavity, and if so, you would effect your

object without the danger of an operation. After the water has been drawn off, the natural efforts will be sufficient to expel the child. The abdomen may also be greatly enlarged, from a collection of gas in the intestines ; but I never saw or heard of a case of this kind without the foetus being dead, and the gas formed in fact from its decomposition. You find the chord flaccid and without pulsation ; the skin of the legs, &c. of a reddish brown colour, and perhaps it peels off in large flakes. Here also you will first give a fair trial to the natural efforts ; if they fail, then you feel little reluctance in making an opening in the intestines sufficiently large to allow the gas to escape. Sometimes there is difficulty in extracting the shoulders, as where the pelvis is small, the child large, or from an unfavourable position of the arms, from neglecting to keep them in the back of the pelvis. You must endeavour to bring down one shoulder to a level with the outlet, then passing all your fingers in the bend of the elbow, bring down the arm with a sweep across the face ; then proceed with the other in the same manner, throwing the body of the child out of your way. After attempting this and failing, you examine the chord and if you find it has ceased to beat, and the child is dead or apparently so, you take the perforator, and planting two fingers in the occiput, as a director, perforate the cranium, separate the blades of the instrument, and enlarge the opening as much as possible ; then pass the crotchet and pulpify the brain by moving the instrument about in every direction ; you will now find the collapsed head descends without the previous abstraction of the arms, although I think it to be a better practice to abstract the arms first, and then bring away the head. In the abstraction of the head in feet cases, various difficulties occur ; the most

frequent are the following :—First, from the unfavourable position of the head. Secondly, from the disproportionate size of the head to the pelvis. Thirdly, drawing down in the wrong axis of the pelvis. Sometimes the head is placed the face resting on one pair of sacro-sciatic ligaments, and the occiput on the other ; here you must depress the chin upon the chest, turn the face into the hollow of the sacrum and the occiput under the arch of the pubis, and the difficulty vanishes ; if the pelvis be large and the child's head small, the pains frequent and powerful, the child may be expelled notwithstanding its unfavourable position ; if, however, the head and pelvis be of the usual size, you may, if you neglect placing the head in the position just described, go on pulling without making any progress, till you pull the head from the body.

Another unfavourable position is that in which you have the chin resting on the symphysis pubis, and the occiput on the promontory of the sacrum, making the long measure of the child's head in opposition to the short measure of the brim ; here you must turn the face to one side of the pelvis, and the occiput to the other ; depress the chin on the chest, and at the same time turning the abdomen of the child to the back of the mother ; having done this, you find the difficulty at an end ; if you cannot do this, you must endeavour to raise the occiput, and at the same time depress the chin on the chest ; making the shortest of the measures of the child's head opposed to the short measure of the brim, and in this position, if the pelvis be large, the head may descend. Lastly, if you also fail in this, your only resource is the perforator, and with it to lay open the head at the occiput, but this should never be done before the death of the child. Thirdly. Drawing out of the axis of the pelvis ; the axis of the

pelvis is, as I have before mentioned, an imaginary line drawn from the umbilicus to the coccyx ; you forget this and draw downwards and forwards instead of downwards and backwards ; sometimes you meet with difficulty from narrowing of the brim, front or back, or from the pushing in of the acetabulæ. When this occurs, you assist the natural efforts, place the head in the most favourable position, the face to one side of the pelvis, and the occiput to the other ; press the chin on the chest, and keep up the pressure there and on the shoulders. This is best done by placing two fingers on the chin, the rest of the hand bearing on the shoulders and chest in front, the other hand resting on the shoulders behind, you pass two fingers upwards, and get a bearing on each side the occiput. Having secured the head, you direct an assistant to wrap a cloth round the body of the fœtus, and draw down during the pain ; that over, you stop—wait—allow the head to mould itself ; again draw down—again wait—and by so doing you find the child's head pass the brim, and comes away without farther difficulty. Be careful to guard the perineum, for the head may suddenly slip through the brim and endanger its rupture. In narrowing in a high degree, or a hydrocephalic head, supposing what has been just recommended has been tried and failed, you draw the body completely out of your way ; pass up the perforator, and puncture the occiput as largely as possible ; then with the crotchet break down the membranes, and pulpify the brain, so as to reduce the bulk of the head as much as may be, and also effectually to destroy every chance of the child being born alive. Decapitation of the fœtus is not, I believe, a common occurrence in British midwifery, and when it occurs it is in ill-managed cases, from force and violence. Several

means have been invented for bringing it away when left in the uterine cavity. One means, is a net with strings to it, to place over the head—very easy to talk about, but useless in practice. There is also an instrument improved by Smellie, which may be used for this purpose. The best is perhaps an instrument consisting of three blades lying one upon another while introduced into the uterus, but by the action of the handle can be made to open so as completely to encircle the head; however, as the natural efforts are often sufficient to expel the head, you must allow them a fair trial, but if flooding comes on, you must deliver immediately. An assistant fixes the head at the brim of the pelvis by pressure through the abdominal coverings, and with a pair of forceps or Smellie's instrument for the express purpose, you bring away the head; if, however, it should be too large, then take a perforator, and either enlarge the foramen magnum or make a large aperture through the occiput, and break down the brain. The head thus reduced in bulk, easily descends by the help of the crotchet.

LECTURE XV.

On turning necessary for conducting the transverse presentations, as the shoulder, arm, or back; the most common of these presentations is that of the arm or shoulder. Turning may be divided into three varieties. First. Those cases in which that operation is of easy accomplishment. Secondly. Those in which it is attended with danger and difficulty.

Thirdly. The impracticable. Proceeding with the first variety; here you have the softer parts thoroughly relaxed, the os uteri fully dilated, and the uterus itself not disposed to contract too much; before proceeding to turn, always empty the bladder by means of the catheter, if the natural efforts fail. If the bowels be very loaded, use a glyster or purgatives of quick operation, but as these often excite the womb to action, you will not have recourse to them without absolute necessity. Having attended to the bladder and rectum, you next proceed to make out the position of the feet, this being absolutely necessary for you to know, that you may at once, when you pass your hand, lay hold of them without groping in the uterine cavity.

In the back cases, you have a great difficulty in making out the position of the feet, but these cases are of very rare occurrence, so that you may be engaged for thirty or forty years in practice before meeting with one. In the more common presentations of the arm or shoulder you have less difficulty; the hand, as soon as you can draw it down, explains to you at once the position of the feet; place the protruding hand palm upwards; if the thumb be to the right, then the head is also to the right; if the little finger be to the left, so are the feet, so that in a shoulder case you will, as soon as possible, bring down an arm, that you may know the position. Having found out the position of the child, you must next place the woman in the best position for the operation of turning. Let her lay on her left side close to the edge of the bed, the thighs bent upon the body, knees also bent, the legs facing backwards, and the feet bearing against the bed-post. The bosom forwards, and the knees and shoulders approxi-

mating : place a low chair by you, that you may be able to sit when tired with kneeling ; you next consider which hand to turn with ; some use the right, others the left. I think you will commonly find that you can use the right hand best, if the feet lie forward, and the left if the feet lie backward. You must now pull off your coat, turn up your shirt sleeve above the elbow, and having furnished yourself with a supply of lard, you anoint the back of the hand, wrist, and arm with it, taking care to avoid the palm of the hand, and inside of the fingers. All this done, you then introduce your hand into the vagina, in a conoidal form, bearing upward and backward, taking care at this time of the perineum, which is endangered by the passage of the knuckles. You now carry your hand to the mouth of the womb ; if the membranes be not broken, wait for a pain, and then break them ; pass your hand upward and forward, bearing at the same time to the side of the pelvis ; still carrying your hand upward and forward, you reach the legs and grasp both the feet as you please, but you will find it most convenient to place two fingers, the first and second on the back of the legs, so that the forefinger may rest above the projection of the heel ; the thumb and two remaining fingers being placed over the front of each instep ; as you draw down throw the abdomen of the child to the back of the mother ; I must warn you, however, lest you use over force. Thus much then about the easy variety of turning. Secondly. Variety, or difficult turning, is often caused from inflammation of the vulva, or spasmodic contraction of the os uteri on the presenting part ; before proceeding to turn, you must ascertain the state of the patient ; she may be in the quiet state, with pulse slow, countenance calm, and skin

moist ; or she may be in the perspiratory excitement, with hot skin, pulse firm and hard, face flushed, with sweating, and perhaps temporary derangement ; or you may find the patient in a state of extreme collapse, the pulse from 130 to 140 in a minute, fluttering and feeble ; cold, clammy sweat, pallid countenance ; in fact, she is moribund, dying, and in this case nothing can be done ; this is generally from laceration, either by a former practitioner in endeavouring to turn, or it may be from a transverse laceration of the mouth of the womb, opposite the symphysis pubis by the over-action of that organ. In the irritable excitement, take blood from the arm ; if from inflammation of the vulva, foment with a decoction of poppies ; bleed from the arm, according to the robust or contrary state of the patient ; give a large dose of the tincture of opium, say from sixty to a hundred drops, not minims, and after waiting a short time, say from half to three-quarters of an hour, you may pass your hand with ease, which before gave the greatest torture.

The warm bath has been recommended till fainting be produced, but this is seldom at hand Secondly. The abstraction of blood from the arm, *pleno rivo*, till fainting be produced, and we know how extremely relaxed the softer parts are after large floodings ; but this will be rarely necessary, except in extreme cases. Thirdly. The exhibition of opium in large doses, sixty, eighty, or a hundred drops, which relaxes the muscular fibre exceedingly. Fourthly. The injection of the infusion of tobacco ; this we know, as in strangulated hernia, produces great debility and relaxation, but I have had no experience of it. I have heard of the extract of belladonna being rubbed on the os uteri, but know nothing of its efficacy.

The method I recommend to you as the best, consists in the abstraction of blood from the arm to the extent of from twenty to thirty ounces, according to the strength and habits of the patient ; I then give her from sixty to eighty drops of the tincture of opium, and placing her in the position before recommended, make out the position of the feet ; and having done that, I know which hand it will be necessary to use in turning ; I also take care to have plenty of lard ready. Your first difficulty is in passing the os uteri ; you then endeavour to pass your hand onward, and you gain more dexterity in your frequent trials ; you may also push out of your way the presenting part, so as to admit your fingers, but to push the child far back is death. You may be from ten to thirty minutes before you succeed in getting your hand into the uterus. After passing the os uteri, you have still farther difficulty ; you will find your hand become very much cramped by the action of the womb, but you must keep it there nevertheless, and by placing your hand flat on the child, you may keep it there pretty easy ; you attempt to pass onward, you stimulate the womb to action, it contracts, and again cramps you, and perhaps causes a sweat to break out on your forehead ; you must give more of the tincture of opium, say twenty or thirty drops ; keep your hand quiet and flat upon the child, and as soon as you find the womb relax, pass your hand forward ; if it contracts, cease ; again pass on, and so on till you reach the feet, always remembering to pass your hand far enough before you attempt to lay hold of them ; having done this, you seize both the feet as before directed, and bring them down. Sometimes you can only reach one foot ; well, you must bring this down, and secure it with a ribbon, then pass up your hand again

into the uterus (which by the bye is much easier done than before,) and lay hold of and bring down the other foot. Sometimes you have the uterus contracted in the middle; in this case, you act as if at its mouth. Sometimes you can only reach the knees; in this case, you draw them down a little, and slide your hand along the legs until you get at the feet; it may happen, however, that you cannot even reach the knees; you must then pass your hand as far as possible, and get the woman to turn over, first upon the abdomen and then on the right side, and you often find the feet drop into your hand. Sometimes the breech rests upon the symphysis pubis; here you must let the nurse or an assistant press steadily and firmly between the brim and navel, urging the breech towards the promontory of the sacrum while you are drawing, and by this method the breech becomes dislodged; sometimes in a narrow pelvis, the hand and feet cannot pass the brim together; here you must work the feet down, keeping the hand above the brim, and having done this, secure them by a ribbon, and then withdraw the hand. In these cases, always be prepared for flooding, and for the child being dead, or apparently so.

Impracticable turning. If not necessary from symptoms to deliver immediately, wait; although you fail in your attempts in the morning, it may be a perfectly easy operation in the evening, and in these worst cases it is, that the spontaneous evolution takes place. If all fail, and you feel either the fibres of the uterus or vagina giving way, or any other dangerous symptom, you must perforate the chest and the abdomen of the child, or decapitate.

LECTURE XVI.

Gentlemen, I begin this morning with making some remarks on the particular cases, for I have said all the transverse presentations require turning. The presentation of the abdomen is distinguished by its softness, and your feeling the insertion of the umbilical chord. In the back presentation, the child lies high, and you can only just reach it with your fingers, or it is perhaps altogether out of your reach. Sometimes you may know it by feeling the spine of the ilium, ribs, or scapulæ; but you may, after having examined most carefully, not be able to satisfy yourself as to the position of the child, and here you are justified in passing your hand into the uterus, and having done this, you then ascertain the presentation and situation readily enough. If the hip be the presenting part, then you have a round and soft tumour, resembling the breech; you feel part of the ilium, the cleft between the buttocks, the anus, and genitals. The shoulder presentation may be mistaken for the head, in a careless examination, but by attention and care you may know it by the scapula, clavicle, arm-pit, ribs, and also a portion of the arm, and by observing the following marks you may make out the position.

If the scapula is behind, so is the back of the child; if you feel the clavicle in front, so is the child's abdomen; but this does not point out the exact position of the feet; but if you can with comparative ease bring down the arm, you have merely to examine the hand, and you at once know the position. If the palm of the hand be in front, so is the

abdomen ; if the back of the hand is behind, so is the back ; the thumb to the right, so is the head ; little finger to the left, so are the feet ; and as these cases are far from common, I would recommend you, when you have attended a case of midwifery, to examine the infant on your visits to the mother, and you may do this without telling the nurse your object in doing so ; here it may be done with ease, and by these examinations you may become conversant with the different parts of the child, so as easily to distinguish the presenting part, when a case of difficulty happens. In the dorsal presentation, turn early if you would turn easy, and this also refers to all the cases requiring the operation of turning ; therefore as soon as you find that you have a case requiring turning, do so ; if you delay, the womb contracts upon the child and makes it a very difficult if not, an impracticable operation. In dorsal presentations, the breech might be brought down without much difficulty, or the head, according as to what part of the back presented. Supposing you have a presentation of the arm, by it you ascertain the position of the feet ; well, the general rule is to deliver by turning, as already explained. Never think the arm in your way, and by no means pull at it ; you may pull and pull, till you pull it off ; but as you would not like your own arms to be pulled off, dont do that to the foetus : I will not say that the arms ought never to be removed, but I never yet saw a case requiring it. If the arm presents, let it alone ; pass up your hand, lay hold of the feet and bring them down. Sometimes the shoulder is blocking up the os uteri ; here you may push it back, so as to admit your fingers, but not more, and this is an evil but cannot be avoided. In cases where the child is under, or not more than six months, it is unnecessary to turn, if the

pelvis be of the ordinary capacity. If at the seventh, eighth, or ninth month, it is always necessary, except the child be very small, and the pelvis exceedingly large; but these cases are rare, and do not alter the general rule of turning in the latter months. In the early months, not later than the sixth, if the pelvis be of the ordinary capacity, and the pains strong, the child does not require turning. Here again I tell you not to pull at the arm, for the younger the fœtus, the tenderer is its structure. Supposing the arm presents, you must bear in mind that the child may be born by the spontaneous evolution, and this occurs most frequently in our worst cases; it seldom or never occurs until the child be dead, or apparently so, for the muscles of the living child are too tough to bend and give way to such a degree as is here necessary, and the manner it occurs is this; the womb acts and gradually doubles the child, tending at the same time to push the breech nearer the outlet; by-and-by the breech is pushed down, and as the pains increase the legs are pushed out, so that you have the legs out and one arm. Nothing now remains but to bring away the other arm and the head, as you have been previously directed. It was once proposed, and had the authority of Denman, to leave all the brachial presentations to the spontaneous evolution, but it was found not always to occur, and women were placed in the greatest danger; but that it does sometimes occur in these cases is necessary for you to bear in mind, as after all your attempts to turn have failed, by leaving the case to itself for a while, the child may be born by the spontaneous evolution, saving you from having recourse to embryotomy. You may find the spontaneous evolution occurring by feeling the abdomen, ribs, &c. First, the thorax of the child, and then the abdomen and flank; ultimately the

hips and breech are urged through the brim, and until the legs are protruded, you must not interfere. But if all your attempts fail, if you have attempted to turn, and fail, and also a friend you called in, the spontaneous evolution not taken place, and you can wait no longer, from symptoms becoming urgent, then you must reduce the size of the foetus, either by decapitation, or laying open the chest and abdomen.

On Flooding cases. By flooding, I mean the large eruptions of blood from the uterus, whether in the early or latter months, having a tendency to bring on premature delivery; very little of the blood flows from the child, nearly all from the mother. In the early months, the detachment of a part of the ovum from the uterine surface produces flooding, for the vessels of the uterus shoot in large numbers into every part of the ovum; but in the latter months, the vessels of the membranes are very small, and occasion little loss, but a partial separation of the placenta causes large bleedings. The quantity of blood lost may be from a pint to a gallon, according to the length of the flooding, and the period of gestation; sometimes you have three or four large gushes of blood, and then a draining for days. Much depends on the period of gestation; those in the early months in general do well, say not later than the third month, but if later, they may be to such an extent as to prove fatal. In the early months, the uterus and vessels are small, but in the latter months, of very large size; much also depends on the size or extent of the ovum detached; if the flooding be troublesome and dangerous, we have it in our power, by inducing delivery, to stop it at once. Flooding cases may be divided in three varieties. First. The sparing floodings. Secondly. The larger and more dangerous. Thirdly.

Those cases in which the patient is in a state approaching to asphyxia; you can hardly hear her breathe, she is cold, pale, and ghastly, the pulse not to be felt; and she lies in a state seemingly dead. You may have the more sparing floodings in the latter months, but more frequently in the first five or six weeks. *The Treatment.* In these cases, the patient must lie on a sofa, or in bed; the bed, perhaps, being the best, as the woman is less likely to rise occasionally, and stir about, a mattress is far preferable, as being much less heating than a feather bed. You must give the blandest nourishment, and keep the patient perfectly cool and quiet, so as to allow clots to form and stop the mouths of the bleeding vessels; avoid all stimuli; wine, without the patient be extremely debilitated, will be very improper; you must first clear the bowels; if very much loaded, the senna and salts may be given; if milder purgatives only be required, then use rhubarb, or castor oil may be given, if it does not produce sickness. The action of a purgative is twofold, it clears the bowels, and cools the system generally: the more violent purges, as aloes and calomel, must not be administered, without you wish also to expel the ovum, as they tend to excite the uterus to action; you may also make use of refrigerant remedies, as the following draught:

℞ magnesiæ sulphatis ʒ i
 Acidi sulphurici diluti ʒ iss
 Infusi rosæ ʒ iss
 Misce, fiat haustus

to be taken thrée or four times in the course of the day, or the potassa nitras may be given in divided doses to the extent of a drachm daily, but not combined

with the acid. Some recommend digitalis, but I advise you not to use it till you have tried the above remedies, and they have failed. If the bleeding increases, if the pulse be quick, and there still exists great vascular excitement, you may then give the digitalis in effective doses; if you prefer the tincture, you may give the extent of sixty drops daily in divided doses, or an ounce and a half of the infusion in the same space of time: this drug requires careful watching, as it is apt to accumulate in the system and produce dangerous symptoms; there are three marks by which you may know it has taken effect; 1st, increase of urine. Secondly, a deadly sickness, and sometimes diarrhœa. Thirdly, a slow and intermitting pulse, sickness, vertigo, &c. When you find one or all of these symptoms marking the action of the drug, you must immediately withdraw it. The oleum terebinthinæ has been recommended; you may give it in the larger bleedings; I would advise you to give it on the surface of water rather than in the form of an emulsion, to the extent of four drachms daily; but if it produce sickness, leave it off. Some recommend bleeding from the arm. You may bleed in the small floodings occurring in the early months, but not in the latter; for as soon as you have bled your patient, say to sixteen ounces, from the arm, she may lose twice or three times that quantity from the uterus, and if the placenta be lying over the mouth of the womb, it is highly improper, as no bleedings will stay that from the uterus. But if you have fever, excitement, and a quick, hard pulse in the early period, say the fifth or sixth week, you may take from eight to sixteen ounces of blood from the arm, according to the state of the patient. Opium has also been recommended; you may try it, but I have found, in three or four cases, that it neither relieved

the pain, nor prevented miscarriage ; mild nourishment must be given frequently, so that if the bleeding returns, she may keep up the supply of blood. Alum, catechu, kino, &c. have been recommended as astringents, but they are of no use in checking floodings ; your best practice will be to keep your patient in bed, quiet, cool, avoiding all things tending to disturb her mind ; supply her with the mildest nourishment, either in the fluid or solid form ; in the fluid, broths, jellies, bread and milk, may be given : in the solid, fish or fowl, and if these can be digested, perhaps they are the best, because a given bulk contains more nourishment. Open the bowels once or twice in the twenty-four hours, avoiding every thing tending to stimulate or disturb the patient.

LECTURE XVII.

Before I proceed to the larger and more dangerous cases of flooding, it may be proper to point out the different modes in which the bleeding ceases. Flooding from detachment of the ovum or placenta may cease from its causing fainting, at which time the circulation is very languid, and the impetus of the blood very slow, so that clots form in and upon the bleeding vessels ; and it deserves remark, the more faint the patient is, the more likely the blood is to clot, both in the vessels and external parts ; and if she be suffered to lie in this situation, but a very small quantity of blood will flow, even supposing all the vessels are not yet closed. In other parts of the body, after a wound, inflammation comes on, and

plugs up the vessels as in a stump, and it grows up by the adhesive inflammation; it has been supposed this takes place in the vessels of the placenta and uterus, but this is doubtful, we having no proof of this at present. The vessels of the inner membrane of the uterus throw off a quantity of red fluid monthly, and it is these vessels, I conceive, which bleed. Also, and most important, as it is unlike any thing observed in the other parts of the body, is the flow of the liquor amnii, for by the discharge of this fluid, the flooding either entirely ceases, or at all events, ceases to be in the least dangerous. In the first place, by the discharge of this fluid, the uterus contracts and compresses the vessels passing through its muscular mass, and by the cavity being less, it contracts and presses the placenta, so that by this flow, there are two important points gained of stopping the bleeding. Lastly, and also peculiar to the uterus, is the complete evacuation of its cavity by the expulsion of the ovum and placenta; now this seems to act by compressing all the vessels ramifying through it, and after this evacuation, the blood does not flow to this substance with such impetus, nor in such quantity.

The second variety of floodings, where the eruptions of blood are larger and more dangerous, may occur in the early, but are much more likely to happen in the latter months. *Treatment.* Keep the patient perfectly quiet on a mattress; give her bland nourishment frequently, if she can take it. The temperature of the room must be 58 degrees of Fahrenheit, for it is desirable the patient should feel chilly. In cases of this kind you must consider whether the bowels should be emptied; you may give for that purpose the following mixture:

℞ sulphatis magnesiæ ℥vi
 Acidi sulphurici diluti ℥ii
 Infusi rosæ ℥vi. misce.

Two table spoonfuls may be taken every three hours until the bowels act. Again, in these more obstinate floodings, you may try the oleum terebinthinæ; give three or four drachms on the surface of distilled water, during the twenty-four hours; if it produce sickness, then you may administer the effervescing draught every three or four hours. I have had, however, but little experience of this remedy. Another, the acetate of lead, has been highly recommended by Dr. Rush, of New York, and also by the late Dr. Haughton. It has been recommended to use it in the form of injection, but I have had no experience of its efficacy in this form: taken into the stomach, I would recommend you to use it in small doses, and watch it carefully; from four to six grains may be considered a fair daily dose; it may be given in the form of mixture.

℞ Plumbi Acetatis gr iv
 Acidi acetici ℥ii
 Tinct: opii ℥i
 Aquæ distillatæ ℥vi. misce.

Three table spoonfuls may be taken every three or four hours, till the flooding ceases; you may give it in the form of pill.

℞ Plumbi acetatis gr vi
 Ext: gentianæ gr xii
 — opii gr ii misce, fiat
 Pilulæ vi.

One to be taken every three or four hours : I have not seen or known a case of this remedy producing paralysis, but I have known it produce severe cholic ; always give opium in combination with this remedy, and also be careful to watch it : never allow the patient's bowels to become confined under its use ; if you find the cholic coming on, leave off the remedy, and also whether the bleeding shall have ceased or not ; if you have given the lead to the amount of half a drachm or two scruples, leave it off, it will do no good ; if it produce cholic, give purgatives combined with opium, as the compound extract of colocynth, and extract of opium, or laudanum and castor oil ; it has also been recommended to use the warm bath, but this is likely to re-produce the bleeding, and is not often at hand ; cold may be applied in various ways, to the rectum, abdomen, vagina, &c. ; if the system be cool already, you do no good by the application of cold ; but to satisfy the feelings of the friends, you may apply a little vinegar and water. If you have pressing hemorrhage, and the system in a state of excitement, then you may apply cold with advantage ; you may inject six or eight ounces of cold spring water into the rectum ; this is a very cleanly way of applying cold, and by its approximation to the uterus, of great service ; it may be repeated every three or four hours, according to circumstances. Ice may be introduced into the vagina, or applied to the external parts, either wrapped in flannel or not, as the patient can bear it.

A third and better plan is sprinkling napkins over with vinegar and water, and applying them suddenly to the abdomen and genitals, changing the napkins as often as they become warm. I think you will find that well sprinkling them will be more effectual

than drenching them with the fluid ; also by plugging the vagina, where the blood is draining away, you may succeed in stopping it by introducing a sponge or silk handkerchief. Some women cannot bear the vagina plugging ; in these cases pressing with the hand over the vagina, till the blood coagulates, will be found useful, by forming a natural plug. Your plug should gently stretch the vagina, but must not be used in after floodings ; the best cases for it are those in the middle or latter months. The next remedies are those which expel the ovum : in a great number of miscarriages I found no embryo ; I conceive it dies and is dissolved in the liquor amnii : in these cases it is no use to retard the miscarriage, for the uterus, when empty, is safe in general. In keeping back miscarriage, we increase the danger of our patient ; in trying to save the embryo, we undermine the constitution of the mother, and by allowing the frequent returns of the floodings, we allow the system to get into such a state, that the woman may have five, six, or more miscarriages follow each other ; whereas, if we had emptied the uterus before the patient was much reduced, we should have given her a better chance of going to the full term of gestation, when she again became pregnant. Some advise stimulating injections thrown into the rectum, and when there are pains, these may be sufficient for the expulsion of the ovum ; you may use an injection made by dissolving an ounce of salts in half a pint of the infusion of senna. The most effectual remedy, however, for exciting uterine contraction, is the *secale cornutum* ; two drachms of it may be coarsely powdered and boiled with four ounces of water to an ounce and a half ; a table spoonful of this decoction may be given every twenty minutes or half hour,

beginning, however, with this medicine when the woman has pain. In these more obstinate and dangerous floodings, there is another mode of stopping them, viz. by the discharge of the liquor amnii; the hemorrhage either ceases altogether, or ceases to be dangerous, and this, after all other remedies have failed; neither is it difficult to accomplish; carrying one or two fingers of the left hand through the os uteri up to the membranes, usually easily felt, you pass a bluntly pointed instrument, say for example, a female sound, and with it puncture the membranes and discharge the liquor amnii; well then, suppose all your remedies have failed, you rupture the membranes, introduce your hand into the uterus, turn the child, if necessary, and bring it away. Sometimes the uterus is closed; here you must examine frequently, for in some cases the os uteri dilates very rapidly. I shall merely further add, if your patient faint from loss of blood, in these cases of floodings, let her lay in that state, never allow her to have stimulants without she is in a state approaching to asphixia; they then become absolutely necessary.

LECTURE XVIII.

Having considered the mild and small floodings, the larger and more dangerous, either to the patient's future health, or even to the loss of life, we come to the third, and most dangerous kind, in which the patient is either dead or lying in a state of apparent death; I mean in a state of asphixia, or deep fainting. If the patient be dead when you arrive, you can then be of no service to her; you must, however, think of the child. If the wo-

man has died gradually, then there is little doubt the fœtus is dead also; but if the woman has died suddenly, say in three or four hours from the first beginning of the hemorrhage, then the child may be alive; for you must recollect what I told you in a preceding lecture, that the blood flows from the mother and not from the child. Then again, before you think of attempting to bring the child away, you must ascertain whether or not the os uteri is dilated and the softer parts lax; if they be, then I would introduce my hand and bring away the child by the operation of turning, whether dead or not, but on the contrary, if the os uteri was undilated and the softer parts rigid, then I condemn it as cruel and unfeeling; for although the woman be lying in a state of apparent death, she may still possess feeling, and to use force sufficient to bring away the child, would also tear and lacerate the softer parts of the mother, which I conceive no man would do if his heart lay in its right place.

In the sudden fatal cases you may expect the child to come away apparently dead, and therefore you must have warm water ready, and also your tracheal pipe, to adopt the means for resuscitating it as soon as possible. I should say from my own experience, about one in three may be resuscitated by diligence; but you are also called to patients not dead, but apparently so; here you must be possessed of coolness and calmness, necessary also to inspire the friends of your patient, who will very often be led by your demeanour. Perhaps you find her stretched upon the bed, pale, cold, ghastly, unconscious, respiration nearly ceased: or you have convulsive sighing, the pulse from 140 to 150 in a minute, fluttering and feeble, or it may not be perceptible at the wrist for half an hour together. In some of these cases they will

sink, but in general, when properly managed, will rally and do very well. Supposing a woman in this state the first thing to be done is to ascertain from what cause the flooding has come on, whether she be pregnant or not, and if so, whether in the early or latter months ; in the early months, as I told you before, they generally recover, but not always ; they may die immediately from the loss, or diarrhœa may come on, and take off the patient. Then another question relates to the condition of the uterus ; these larger bleedings are very often after floodings ; you ascertain whether the ovum be in the uterus or not ; or they may be twins, one expelled, the other not. If the ovum has been discharged, and the uterus be perfectly empty, it adds greatly to the safety of the patient. A next enquiry relates to the continuance of the bleeding ; whether it is stopped or not ; generally it is, or there is merely a show, and it must be so from the faint state of the patient ; if the flow of blood be languid so as not to be sufficient to keep up the discharge, she may rally and the bleeding may then return ; the best way to know this is to take a napkin and slide it gently under her person without moving her in the least ; take another, fold it up and lay it over the genitals, first clearing away the blood from the parts with as little disturbance as may be ; you must examine this napkin every five or ten minutes ; if unstained, then no hemorrhage is going on, but if you observe an extensive stain ; with clots upon the napkin, you then know the hemorrhage still continues ; before applying the napkin you should with your hand press upon the uterus, so as to press the blood out of its cavity. In general the napkin remains unsullied ; you then find whether she is rallying or not : she may rally, or she may be gradually sinking into

a state of asphixia. Well, she rallies a little in two or three hours, and gains a little strength ; in twelve hours has gained strength to a considerable degree, so as to talk, or even smile ; or from the loss she may sink, then rally, then again the respiration ceases, or is convulsive ; she is very cold, pulse not to be felt ; in fifteen or twenty minutes again rallies, again sinks, getting lower and lower, till she sinks into that grave from which no human aid can save her. You may find your patient lying on the floor, her attendants not being able to move her ; or she may be lying on the bed apparently very uncomfortable, and if the patient has rallied a little, she may be very urgent to be moved : if she be completely rallied, and if she may be moved apparently without danger, you may do so, but in general it is a highly dangerous practice. In one case I well remember being called to—a patient who was lying in a state of asphixia ; she rallied, and begged very much to be moved ; and here I let my feelings get the better of my judgment ; I moved her, and it brought on the most frightful and alarming flooding. In another case in which there was very great flooding, and the patient reduced to a state approaching asphixia, though likely to do well ; contrary to my express wish the patient was moved, and for a few minutes her life seemed in the greatest danger. Therefore, move your patient as little as may be ; while she is lying still in that languid condition, clots form over and in the bleeding vessels, which act as a barrier to farther bleeding when the patient rallies. If she be on the edge of the bed, you may allow her head to hang over, so that there may be a greater flow of blood to the brain. Again, when in a state of deep fainting, you must consider whether it be proper for you to interfere manually in bringing away what

remains in the cavity of the uterus, whether it be the ovum, the placenta, or clots. If she rally, and is disposed to bleed again, then you may do this, first explaining to the friends the danger she is in, and the danger that is again coming on. You must not guarantee for the safety of the woman, but say at once boldly it is the only chance the patient has; and if you can have the advice and assistance of another practitioner, so much the better, as then the responsibility is divided. Sometimes when women are in this state of asphixia, it is much better to leave the womb undisturbed; for in attempting to turn, while you are drawing down the feet, or bringing away the shoulders or the head, the patient may die from the jactitation induced, although no farther hemorrhage be produced, and if you happen to forget this in your practice, you will have to repent it; even the introduction of your finger needlessly is an evil, as it tends to disturb the clots which are formed.

On Cold. If the heat of the body be considerable, especially the trunk, then cold will be efficacious; but in general in these large floodings the body is cold already; but to satisfy the friends, and to seem to leave nothing undone, you sprinkle a napkin with vinegar and water and apply it smartly to the abdomen. *Plugging the vagina.* In the early months, if the fœtus still continue in the uterus, and the bleeding seem apt to return, then it will be of service, in the latter months, or in after floodings more rarely necessary, as it may give rise to internal hemorrhage. If the fœtus remain in the uterus, then you may plug with more safety, as the cavity is smaller, but in general this will not be required. Another point of practice to be remembered, is the use of nourishment; this may consist of, bread and milk,

milk alone, mutton broth, beef tea, or eggs beat up with tea ; milk, or bread and milk, are as good as any, and have an advantage in occupying less time in their preparation. These different kinds however are often rejected by the stomach, or if not, I conceive that organ to be so debilitated as to make very little blood, from what is taken into it, but if retained, they can do no harm. and you may give from half to three quarters of a pint of any of these liquids at once, but not more. Opium has been recommended in large doses by Hamilton, Stewart, and others ; if the patient be restless, throwing her arms and legs about, and tossing from side to side in the bed, which they sometimes do when approaching to a state of asphixia, you may give it, and in large doses, for the stomach is so languid, that a small quantity seems to have no power ; it does no harm, but I cannot say I have seen much benefit from it ; in general the patient lies very quiet without it. You may give from one to two drachms of the tincture of opium, and in the next twelve hours, thirty or forty drops more ; if the patient become drowsy, or garrulous, leave it off ; if not, continue it till its wished-for effects be produced. If the uterus be emptied, or if you are going to deliver by the hand, it may be given ; but if you want the action of the uterus, you had better not give it. If the patient be in a state approaching to asphixia, and instead of rallying, seems to be getting gradually worse, we must have recourse to stimulants. Rum, gin, or brandy, according as any of them happen to be at hand, or are preferred by the patient. The best way is to have a bottle full of the spirit by you, so that you may judge without trouble what quantity you have given ; you may give it either pure, or mixed with an equal quantity of water, according

as it may suit the palate of the patient; it must be given according to the effect produced: you may have to give from a quarter to half a pint, giving half a wine glass full for a dose, and repeating it every twenty or thirty minutes if necessary; if the pulse rise, or the woman seems wild about the eyes, or talkative, leave it off; if it produce no effect, give more; it is astonishing what quantity a woman may take when in this state; she will bear ten times as much as when she was in perfect health. After giving spirit, vomitings often come on, attended with the most violent retchings, so as greatly to alarm the inexperienced practitioner, but instead of ill consequences, they are often very beneficial, so that it has been recommended to give emetics, but this is far too dangerous a practice. It is in these sort of cases that transfusion is to be had recourse to, if at all; and I have several times performed this operation, and with success; in general women do very well without it, but not all. If a woman gets over the first two or three hours after a large loss of blood she will do well, or she may have several immense gushes and die immediately; but in the majority of cases, they keep rallying and sinking: if the woman keep rallying, let her alone; but if instead of rallying she keeps gradually sinking, then you must have recourse to transfusion; if well performed, it is both easy and free from danger. It must be confined in the present state of our knowledge to the worst cases; it may be tried in women undelivered, but with less chance of success than when the uterus has been emptied, for then the vessels are contracted and closed, instead of being open, as in the former case.

LECTURE XIX.

Sometimes after these large bleedings you have *head ache*, attended with a certain lightness and beating, much aggravated on raising the head from the pillow, only to be relieved by time and the assiduous use of mild nourishment; it seems to be caused by a want of blood in the vessels: it may last from twelve to fourteen days, but although sometimes alarming, seldom terminates in a cerebral attack. Sometimes you have *diarrhœa*; if violent and continued, it is highly dangerous, and may destroy the patient; it seems to be caused by an inflammatory affection of the mucous membrane of the bowels, produced by the general ill health caused by the previous loss of blood: a pure air and dry food will be found the most effectual remedies; if your patient reside in the crowded part of a large town, a removal a few miles into the country will often cure after all other remedies have failed; you may also use astringents, as the catechu, kino, chalk, opium, aromatic confection, &c. Sometimes after these large eruptions of blood you have effusion taking place in some of the cavities of the body, as the chest, abdomen, &c.; they are however of rare occurrence. In the early floodings, if you have continued *draining*, there are two remedies well worth your notice, namely, *mercury*, given in the form of calomel or blue pill, so as slightly to affect the mouth. Secondly. *Astringent injections* thrown, not into the vagina, but into the uterine cavity, twice or oftener in the course of the day, beginning with half a drachm of alum to a pint of water, and increasing the strength according to the effect produced.

Floodings from the placenta lying over the mouth of the womb. This variety fortunately is not of very frequent occurrence, it being highly dangerous to both mother and child. The placenta may either be situated partially or wholly over the os uteri, rendering the patient liable to large and dangerous floodings, either in early or latter months, but generally, and I think about the seventh or eighth month, often commencing without any obvious cause ; the patient may be sitting quietly occupied in some domestic occupation, as with the needle ; when a large eruption of blood bursts forth, asphixia speedily follows, and sometimes, though rarely, death itself ; after a short time uterine pains come on with more or less severity, and each contraction of the uterus attended with a gush of blood varying in quantity.

The reason this variety of flooding is confined to the latter months, seems to be this ; in the early months the ovum is situated in the body of the womb, the neck not yet forming a part of the receptacle ; but during the latter months, the cervix uteri dilates and becomes gradually shorter, and forms a part of the uterine cavity ; the consequence is, that although the cervix uteri dilates, the placenta does not, consequently a movement of one surface over the other, slow but certain, is produced ; now this being the case, there is a tearing of those large and numerous vessels which pass from the uterus to the placenta, and consequently a large spontaneous eruption of blood ; as the uterus acts the placenta is first pushed down, so you have more and more vessels torn through, and also a gush of blood more or less in quantity occurring with each pain ; both of these symptoms are characteristic of the disease. Whenever you suspect from these symptoms that the placenta is lying over the os uteri, careful in-

ternal examination must be had recourse to as soon as may be. I would advise you to acquire a knowledge of the tangible properties of the placenta, so that you may have no difficulty in distinguishing it, when in this situation, from clots of blood which may also lie under the finger: if inexperienced in the feel of the placenta, you bring a small portion away, and on throwing it into water, you readily discover one from the other. *Treatment.* When called to a case of this description, if you find the woman in a state approaching to asphyxia, provided also the bleeding be arrested, let her lie quiet, refrain from manual operation, for by disturbing the clots, you bring on a renewal of the bleeding, which may probably destroy the patient; but if the woman be not reduced so far, you must remember that the general rule is to deliver immediately you can do so with safety, by introducing your hand into the uterus, laying hold of the foetus and bringing it away by the operation of turning. The proper time for doing this, is when the softer parts are lax, and the os uteri dilated to the size of a half-crown, for here the danger is great, and justifies our not waiting further dilatation. If the os uteri be closed, if the softer parts be rigid, also if the patient be in a state approaching to asphyxia, wait; for by disturbing the clots you may re-produce the bleeding, and at this time a single cupful of blood may turn the scale, and cause the death of the patient. If the softer parts be rigid, examine frequently, yet gently, and you will often find that sudden relaxation of the parts occur; it may be from twenty to thirty minutes, occasionally much sooner.

Never quit the bed-side of your patient till she be delivered, for these cases are extremely dangerous, and demand your utmost vigilance. The child is to be

brought away by turning, which operation may be performed in several ways. First, you may carry your hand into the os uteri, and make an opening through the placenta sufficiently large to admit the hand, at the same time dilating the os uteri; having got your hand into the uterus, you lay hold of the feet, and bring away the child. A second method consists in passing the hand through the os uteri, and between the uterus and placenta, until you reach the membranes, which you rupture, then seize the feet and turn as before. For myself, if I find the bleeding of short continuance, and the woman little reduced by it, I do not scruple to enter through the membranes, because I conceive I have a better chance of saving the life of the child, the loss of a few ounces of blood not causing any danger to the mother. If, on the contrary, the woman be very much reduced, I then prefer entering the uterine cavity through the placenta, because the bleeding is small, and the woman placed in less danger; and it is an axiom in British midwifery, that the safety of the mother is ever paramount to that of the child. If the woman cannot be delivered, it may be advantageous to puncture the membranes through the placenta, taking care not to detach it, and discharge the liquor amnii. When the membranes are felt over the os uteri, the placenta giving it but a partial covering, the waters under such circumstances may be easily discharged. The errors you are likely to fall into are the following:—

You may attempt to turn, the parts being yet rigid, to the danger of bruising and tearing the softer parts. Secondly. You may delay the delivery too long, allowing the woman to become so reduced, that she either dies undelivered, or dies as soon as the child is brought away. Thirdly. Using hurried measures

by not beginning sufficiently early, and then having to use more than proper haste ; if you turn early, you will not have to do this. In all cases hurry and violence have no place in scientific midwifery. Fourthly. Waiting for pains. In ordinary labour you must have pains before you can give assistance, but in these cases where the placenta is lying over the mouth of the womb, very often the uterus is paralytic from the loss of blood, and whether you have pains or not, deliver if the flooding require it ; this waiting for pains has been the death of many, and should this rule be forgotten will again be attended with fatal results. Fifthly. Using too much violence in the passage of the vagina and os uteri. Sixthly. In using manual interference while the patient is lying in a state approaching to asphyxia, at which time, as I have before told you, a farther loss of a few ounces of blood may destroy the life of the woman. Lastly. Leaving the woman undelivered. It is well to have another opinion in these cases, more particularly if you are just beginning practice. Thus much then of this variety of flooding.

You have also large eruptions of blood occurring in the latter months of pregnancy, although the placenta is not lying over the mouth of the womb, known from the bleeding occurring from some cause, as a fall, blow, or fright, and from the pains not being attended with gushes of blood, but the best diagnostic is internal examination. These floodings manifest themselves under various forms ; you may have a patient die suddenly with symptoms similar to those of ruptured aneurism, and on laying open the body after death, you may find two or three pints of blood in the uterine cavity ; this is, however, a very rare occurrence. Secondly. Though seldom, yet some-

times occurring, is a large flow of blood during the passage of the child's head through the pelvis ; here, if the eruption of blood be not very abundant, and the head is making proper progress, the less you interfere the better. On the contrary, supposing the discharge great, and the passage of the head very slow, then I conceive the ergot of rye might be used with advantage : if the head be above the brim, you must pass up your hand into the uterine cavity and bring away the child by the operation of turning, or if below the brim, the lever or the forceps may be used with success ; the emptying of the uterus being the only effectual mode of stopping the discharge. Again you may meet with flooding cases in which labour has not yet began, the membranes are not broken, and the os uteri is closed or nearly so ; if the discharge be unattended with danger, you will not interfere manually, but have recourse to rest ; let her lie quiet in bed, keep her cool, and if there be slight fainting, encourage it ; you may also give the refrigerants formerly mentioned, also the oil of turpentine, and the lead ; cold must also be applied locally. If, however, the discharge be very copious, and you feel alarm for the safety of the patient, you are then justified in having recourse to manual operation. A simple and easy, yet most effectual operation, is the rupture of the membranes and the discharge of the liquor amnii ; still, however, this even is sometimes liable to failure, the flooding still continuing ; now in this case, your only remaining resource is the complete evacuation of the uterus ; you must bring away the child by the operation of turning, never rash ; however, you will wait and avail yourself of the proper moment for doing this ; if the softer parts are rigid, and the os uteri closed, wait ; if also the patient be in a state approach-

ing to asphixia, wait ; allow her to rally before you attempt to turn ; when she has rallied somewhat, then examine if the os uteri be dilated, and the softer parts lax ; pass up your hand, and bring away the child as soon as you can, but if the parts be rigid, wait. Remember, however, that Rigby found in sixty cases of flooding, discharging the liquor amnii to be sufficient ; Merriman also relates thirty cases.

Errors. Neglecting by internal examination to ascertain whether or not the placenta be lying over the mouth of the womb ; this is an error of serious importance, because the treatment is very different in each case. Secondly. Trusting too much to medicinal treatment, to the exclusion of manual interference. Thirdly. Allowing yourselves to be too much alarmed at the large eruptions of blood, and induced to carry your hand into the uterus, and extract the child when merely rupturing the membranes would have been sufficient. Fourthly. Delivering in a hurry, endangering laceration. Fifthly. Waiting for pains, which, as I before mentioned, may not occur, the womb being paralysed and incapable of action, but this, instead of deterring, ought to stimulate you to manual exertion, as it shows the womb to be inadequate for the expulsion of the fœtus.

LECTURE XX.

After Floodings. By after floodings, I mean those discharges of blood which take place subsequent to the birth of the child, before or after the expulsion of the placenta ; sometimes this flooding may be several

days after delivery before it occurs ; this may be from a clot of blood lodging in the cavity of the uterus, but more generally from a portion of the placenta having been left behind. If you have urging, forcing, bearing down pains, attended with foetid discharge, always suspect this ; you must examine internally, and probably you find a portion of the placenta lying over the mouth of the womb ; if, however, the bleeding be not severe, cold thrown into the rectum may be sufficient for the contraction of the uterus ; or the ergot of rye may be administered for this purpose ; if the bleeding be obstinate, and does not yield to the remedies previously recommended in flooding cases, you may throw an astringent injection into the uterus, say a scruple or half a drachm of alum to a pint of water ; if from a portion of the placenta yet remaining in the uterus, bring it away. More rarely you meet with cases where the patient is assailed an hour or two after delivery with vomiting and uterine pains, each attended with a gush of blood ; these cease, and again occur, reducing the patient to a state of great danger, or perhaps she sinks altogether from the loss of blood. It appears to happen only in peculiar constitutions ; it is liable to return ; therefore when it has occurred once, you will carefully watch the patient for several hours, in her future labours.* Again, you may have internal bleeding, from a clot of blood

* I have seen one case of this kind, the sickness and uterine pain occurring about every ten minutes, attended each time with a gush of from one to two ounces of blood ; by the time I arrived the woman was much reduced ; I suspected retention of a portion of the placenta ; on examination, the os uteri easily admitted two fingers, the uterine cavity large enough to admit the hand. Teasing the internal surface of

forming over the mouth of the womb, filling up the neck; the womb may contain from one to four, or even six pints, and that without any external discharge; you find the woman fainting, cold, pallid, perhaps no pulse to be felt at the wrist, and on laying the hand over the abdomen, you find the womb large and soft, and by pressure blood comes gurgling away. There is no flooding more dangerous than this, nor more easy to discover; the blood may flow externally, yet be collected in the centre of the bed, producing the same symptoms; but the most frequent cases of after floodings are those in which the blood flows obviously enough, sometimes before, sometimes after the expulsion of the placenta; it may be, you have one large gush, and the woman sinks in a few minutes, or she may survive several hours, enabling you to perform the operation of transfusion, or what is most common, you have several gushes of blood, the woman faints from the loss, a mere draining alone continuing, and after the lapse of a few hours, say three or four, she has so far rallied as to become in a great measure free from all danger.

Treatment of after-floodings. I find it convenient to divide flooding cases into two kinds, namely, those in which you may give manual assistance, and those in which you may not. If called to a woman lying in a state of asphixia, from the large loss of blood, debilitated in a high degree, and the placenta yet remaining in the uterus, you must neither disturb the clots of blood formed in the vagina, or attempt to

the womb with the finger brought on its complete contraction, and the symptoms immediately ceased; but the woman suffered much the first fourteen days from headache, caused by the large loss of blood.

bring away the placenta; instead of which, it may be necessary to give stimulants, or even perform the operation of transfusion. If, however, a large quantity of blood has not been lost, or the woman has rallied, then manual assistance becomes proper enough, and you must at once secure the contraction of the womb, by the removal of the placenta. If called to a case of flooding, and you find the placenta has been taken away already, make it a rule to spread it out on a napkin and examine its substance, and perhaps you find that a portion of it is wanting, which yet remains in the uterus; or the uterus may be inverted; if you examine through the abdominal coverings above the symphysis pubis, you easily discover this, for if the womb be not inverted, it is found hard, round, and large as the foetal head; if you do not discover it above the pubis, then examine the vagina, and if inverted, you find the womb either lying forth between the thighs, or forming a round pulpy mass in the vagina. Polypi or cauliflower excrescence may be confounded with this inversion, but the sudden appearance of these after delivery are very rare: always secure the contraction of the womb; some recommend for this purpose the introduction of the hand into the uterine cavity, and to gently move it about there till the contraction of the uterus expels it; this, however, can rarely be required. I would recommend you to press on the abdomen, above the symphysis pubis, and the coverings being lax, you may grasp the uterus; in general this is sufficient; add to this, the careful binding up of the abdomen, and the contraction is secured; a cushion may be applied on the lower part of the abdomen, and then a bandage as tight as the patient can bear it with comfort, over it; cold may be applied, if you have

much heat and activity of the system, but in general the patient is refrigerated already ; however, not to seem to leave any thing undone, you may apply vinegar and water. If cold be required, it may be applied either to the vagina or rectum, as before directed ; or if the patient be in that state of fainting, that if it be allowed to go on, the patient will die, you must give stimulants in large quantities, rum, gin, or brandy, according as they happen to be at hand ; the dose I have before mentioned ; also take away the pillow from the head, or if she lie near the edge of the bed, allow the head to hang over ; be careful also to watch the contraction of the uterus.

If the fainting be not dangerous, avoid stimulants ; let the patient remain perfectly quiet. There are four conditions in which the uterus may be felt. First, large and soft ; dangerous, because there is a risk of internal hemorrhage. Secondly, you may have the womb contracted, and yet soft and pulpy, being paralytic from the large quantity of blood lost, but this is less dangerous than the other. Thirdly, you may find it firm, hard and round, and permanently contracted, a state of uterus highly desirable, as it shows power in the system, and secures the patient in general from any further eruption of blood. Fourthly, you may have the uterus hard at one time and soft at another ; contracted at one moment, and uncontracted at the next. A state of uterus not equally secure as the former one, yet ultimately does well. Another thing to be attended to is, to ascertain whether or not the flooding be arrested ; this you do by placing a napkin under your patient, avoiding to disturb her ; you then take another and apply it to the genitals, first pressing the uterus and clearing the blood away from the parts ; examine this napkin from time

to time, say every two or three minutes ; if it remain unstained, then you may rest assured the bleeding has ceased, or if there be only a small stain not larger than a crown-piece, then it is very sparing ; but if you have a very large stain with clots, then the hemorrhage still continues. After hemorrhage has ceased, wait with your patient a considerable time, say three or four hours, for after that time the patient may be deemed safe, but not before ; let your patient lay perfectly quiet, say ten or twelve hours, as she is, without being disturbed, or even longer, if the bleeding has been great.

Generally, however, the bleeding is sparing, not more than a pint or a pint and a half ; and by grasping the uterus, with your hand previously dipped in cold water, and carefully binding up the abdomen, you succeed in arresting it ; should it increase, you may draw aside the curtains, put out the fire, sprinkle the floor with vinegar and water, open the window, and apply cold more assiduously ; in general, these floodings are more alarming than dangerous. There are certain *errors* to be avoided. First. Hurrying away the placenta, and leaving a portion of it behind, or inverting the uterus. Secondly. Overlooking the inversion of the uterus ; if called secondly to a case of after-flooding, always examine. Thirdly. Thrusting your hand into the uterus without need. Fourthly. Overlooking floodings, particularly internal hemorrhage, caused often by forgetting to press on the uterus, and bind up the abdomen. Fifthly. Neglecting to keep the womb contracted, a most serious error, for I have told you that every thing depends on this. Sixthly. Leaving the patient too soon, and also moving her too soon ; you need not fear her catching cold from lying in the wet ; you may, however, by napkins placed around the hips, greatly defend her

from the moisture, and render her situation more comfortable. Sometimes you meet with women who from idiosyncrasy, are peculiarly liable to bleeding, and very undesirable patients they are, the probability being that they will ultimately die under your hands. In these cases, be careful not to accelerate the birth of the child; when the head is born, do not drag out the shoulders, but leave their expulsion to the natural efforts, for then the placenta is less likely to become detached. When the child is about to enter the world, a gentle stimulus may be given to excite the more speedy contraction of the uterus. Denman recommended the sedentary posture during the birth of the child; leaving the placenta in the upper part of the vagina is also recommended; you must, in fact, follow the rules laid down for the abstraction of the placenta.* Thus much then respecting the treatment of after floodings.

LECTURE XXI.

On laborious labours, or those cases requiring the use of instruments. Although the fundamental prac-

* A very illustrative case, by Mr. Evans, is given in the *Lancet*. A woman had been delivered of nine children, and each birth attended with the most alarming flooding; on being made acquainted with this, he determined, if possible, to prevent the recurrence in her ensuing labour. As soon as the head was born, he gave a tumbler of water in which ice was dissolved. The shoulders and body was soon born, the placenta followed in two minutes afterwards, attended with complete contraction of the uterus, very little blood was lost, and the only bad symptom, if so it may be called, was a slight shivering.

tice of British midwifery regards all instruments as an evil, yet there are cases in which their use is justifiable ; not often however, more particularly in the country, the population being more healthy than in large towns. Narrow pelves, or late pregnancies, where there is great rigidity of the softer parts, require the aid of instruments. Labours of this kind are liable to many important accidents, of which it may be proper first to speak : it occasionally happens, though rarely, that rupture of the air tubes occurs in these laborious labours, but not extensively ; I have seen one case only. You find after a severe bearing-down pain, a swelling about the neck, red, and putting on the appearance of erysipelas, but you distinguish it from this by the crepitation felt on making pressure. The cells heal, and the air is quickly absorbed. An accident more frequent, and also more formidable, is the disruption of the vascular system. A case was related to me, in which the left ventricle of the heart was burst open ; the patient perished instantaneously, and on examination a small quantity of blood was found in the cavity of the pericardium. The blood vessels sometimes give way. Dr. Denman relates a case which occurred to him, where the same pain that expelled the child also ruptured the pulmonary artery. Sometimes the vessels of the head give way, and the blood may be extravasated in the brain, forming a clot weighing three or four ounces, causing apoplexy, hemiplegia, &c. These cases are far from common, but if you have a plethoric habit, a full pulse, and great activity of the vascular system, bleed, to render the patient secure.

Rupture of the uterus or vagina sometimes occurs, generally transversely, opposite the symphysis pubis, or the promontory of the sacrum, often occasioned by the

same pain which expels the child. The head may be impacted in the pelvis, and the body of the child pass through the rent into the peritoneal sac, but in general the child is pushed into the cavity of the abdomen, and is followed by the placenta. Sometimes the woman complains of great pain in the part before it bursts, but more frequently of violent cramp, and at the same moment the uterus is ruptured. When it has given way, it is known by vomiting, collapse of the strength, alteration of the pulse, and by the child's head not being felt by the vagina, but discovered through the abdominal coverings; the pulse has a fluttering feel, and is from 130 to 140 in a minute; you have rarely any warning of this occurrence, but should you have, then bring away the child by the lever or forceps. You may rupture the uterus from the rude introduction of the hand, or by the forcible and improper use of instruments; if however, you adhere to the rules of this school, this will not happen to you; the uterus then may be ruptured from three causes—by the rude introduction of the hand, by the abuse of instruments, and spontaneously.

Laceration of the Perineum. The perineum may be lacerated variously, transverse, longitudinally, or oblique. It may be torn through completely, together with the sphincter ani, the anus and genitals forming one common aperture: it may be perforated by the child's head; it may be ruptured from the forcible introduction of the hand, but more frequently from the improper use of instruments, or the powerful action of the uterus, from the rigidity of the perineum, or from the over action of the uterus itself. If from rigidity, bleed from the arm, foment the parts, and be careful to guard the perineum with the left hand, resisting, though gently, the too quick passage of the

child's head. Sometimes, however, the head comes forth and ruptures the perineum in spite of us, so that the practitioner is not always to blame; sometimes the rent is oblique, the rent being carried down one side of the rectum, so that the gut escapes. When the rents are of small extent, they occasion but little inconvenience, but when the rectum is also involved in the injury, the retentive power of the gut is lost, at least for a time; sometimes, perhaps, it is never thoroughly restored; if the laceration extends obliquely downward, the power of the gut remains.

In laborious labours, the back part of *the bladder may be ruptured* into the vagina, by the pressure of the head of the child dividing it into two parts, one above and one below the symphysis pubis; the lower part may be mistaken for the membranes, but on examining, you find the head situated behind it; and if you introduce a catheter into the meatus with its concavity downwards, you find the urine flow; be careful to use pressure, so as to make all the urine flow out, for the bladder is paralytic. If you are using forceps at this time, cease, till you have emptied the bladder; having done this, it is free from the danger of being ruptured, and you may proceed with the delivery. The neck of the bladder may be burst open; here you must do all you can to improve the health, and keep a catheter constantly in the bladder. I know of one case in which the neck of the bladder was ruptured so as to allow three fingers to pass, get perfectly well under this treatment. Sometimes the bladder gives way, and the urine is diffused into the cellular web, situated between the front of the bladder and the abdominal coverings, causing slough, inflammation, and death; now and then the back part of the bladder is

burst open, and the urine escapes into the cavity of the peritoneum ; here you must let out the urine, wash out the peritoneum with tepid water, so as to remove all the urine, and then close up the rent in the bladder by ligature. If I may judge from experiments made on animals, I conceive you will now and then save your patient ; these different lacerations of the bladder are all of them rare, and to avoid them, always keep the bladder empty during labour, by giving little drink, and using the catheter occasionally, if the natural efforts fail ; you will find the flat catheter the most useful, and tact, not force, must be your guide in using it ; generally by gently raising the child's head with one hand, you may easily pass the catheter into the bladder ; if you neglect this and think to overcome the resistance by force, you may push the catheter through the neck of the bladder, leaving the bladder unrelieved, to be afterwards burst open by the child's head.

Accumulations of urine may also occur. Pressure of the urethra by the child's head, swelling and inflammation of the neck of the bladder, spasmodic constrictions of the upper part of the neck of the bladder are the usual causes of these obstructions. Sometimes the bladder may lie in front of the uterus, feeling through the abdominal covering like a large ball : you must allow the patient but little drink ; if she perspire, so much the better ; cautiously raise the head, introduce a flat catheter, and draw off the urine. If, as it sometimes happens, the catheter cannot be introduced, then you must proceed to bring away the child by instruments, if the accumulation be so large as to endanger the bladder ; and in general, retention of urine indicates much pressure, and danger of slough, and is an argu-

ment for delivery. In these laborious labours *sloughs* may be produced, laying open the vagina into the rectum or the lower part of the bladder on their detachment; they may be merely superficial, affecting the mucous membrane of the vagina only, but these may cause contraction, induration, or adhesion of the vagina. The labia pudendi may be also injured, but this generally does well. These sloughs may be caused by the rude introduction of the hand, the rough use of instruments in drawing down the child's head, or from the spontaneous pressure of the head, or from it becoming wedged in the pelvis; when the head is impacted in this way among bones, there is most danger; if you find no room in the pelvis, and the parts below swell, you must deliver, if you can, by the lever or forceps; if not, use the perforator, or extensive sloughing of the parts suffering pressure will be the result, and the patient may die in a few hours. Again, in narrowing of the pelvis, as long as the head is situated above the brim it is hammered down against it by each pain, and if this be allowed to continue, the softer parts are extensively bruised and liable to slough. Here, if the patient has been in labour twenty-four hours after the discharge of the liquor amnii, or before, if dangerous symptoms manifest themselves, known by the rise of the pulse, tenderness of the abdomen, and collapse of the strength, you must deliver by the forceps; if this be not practicable, then you must have recourse to the perforator. In large towns, contracted pelves are not uncommon, and if in these cases you protract the labour too long, injuries are inflicted on the softer parts. Ruptures and sloughs, however, may be caused by the rude use of instruments. Also in laborious labours, women are sometimes seized with collapse of the strength, said

to be from fatigue, but I think the worst cases are caused by the bruising and tearing of the softer parts, and this bruising is produced by the same means which cause slough; indeed, bruising is always concomitant with sloughing, and generally caused by over force. Perhaps nature has endowed you with a muscular arm; and having got hold of the child's head with your forceps, you get upon the dray-horse principle, as I call it, and begin to pull and haul at the child's head, as if you were pulling against a bear.

When you find collapse only in a slight degree, merely amounting to weariness, opium may be given in a sufficient dose to cause sleep, manual assistance perhaps not being required; but if you find this collapse increasing, then deliver as soon as you can, for laceration or slough are to be feared. Sometimes there is tenderness beginning above the symphysis pubis, and extending over the surface of the abdomen, caused by the uterus being inflamed, attended with frequent pulse. *Treatment.* You must take away blood from the arm, and bring away the child as soon as you can with safety: after delivery, purge freely; apply a quantity of leeches above the pubes, say 20 or 30, and afterwards three or four large poultices one after another, every two or three hours; the blood drawn from the arm will be found cupped and buffed. There is also a state of uterus, causing what I call parturial irritability; I suspect it to be a slight phrenitic affection; it occurs often in patients of a mild disposition; they become quite changed, they are irritable, impatient, and morose; if slight, it soon goes off, if you are careful to avoid all stimuli, for it seems to depend on this: the nurse perhaps has given the patient gin, or wine: but if more marked, bleed, purge, apply cold to

the head, and if it continue after delivery, give the digitalis ; $\frac{ʒi}{ʒ}$ of the infusion may be given for a dose, and repeated until it has a slight effect upon the system. *Convulsions* also are among the accidents of laborious labours, but happily of rare occurrence. Insensibility and spasmodic concussions of the whole frame concurring frequently with the labour pains, are the leading characters of the disease ; flushings of the face, throbbing of the carotids, noises in the ears, loss of sight, of speech, of feeling, are, I believe, the more premonitory symptoms, and if the woman has had the disease before, it is again to be apprehended. You must bleed largely from the arm, and deliver as speedily as consistent with safety. We may have after-floodings also in these labours ; if they occur, you know how to treat them. Never hurry away the placenta, for the womb is fatigued and indisposed to contract, and you may invert it. The child is frequently still-born in these laborious labours, from pressure on the head, as in narrow pelvis, causing apoplexy, or from pressure on the umbilical chord. The means to be employed for resuscitating the child I have before mentioned. Always take care, however, to have them in readiness. The parts about the anus and perineum sometimes swell exceedingly in these laborious labours, from the child pressing on the vessels above. This state of the parts soon goes off after delivery.

LECTURE XXII.

Women in general recover rapidly after these laborious labours ; occasionally, however, although the ut-

most attention has been given, they become affected with various morbid affections ; they may be affected with sloughs either in the upper or lower parts of the vagina ; the labia pudendi may slough to the extent of a crown-piece, and it is astonishing how little the patient's health sympathizes with these affections. If the vagina be opened by slough into the bladder or rectum, then you have disturbance of the constitution, and the health is greatly affected. Your treatment must consist in improving the general health, in keeping the bowels open, and applying stimulating dressings to the sloughs, as the oleum terebinthinæ, either pure or mixed with twice the quantity of olive oil, and to the swelled and inflamed parts around poultices must be applied, together with fomentations, and leeches, if necessary. Again, in these laborious labours, you sometimes have formations of matter in the cellular web, about the vagina or rectum, in various quantity, from one to eight ounces ; these collections of matter, if large, are highly dangerous ; you have great constitutional irritation and collapse of strength, often ending in hectic fever and death. In the smaller collections, the patient may rally and recover, the matter escaping variously, as by the rectum, vagina, or urethra ; to detect the matter in these cases is not always an easy task ; throbbings, shiverings, hectic and internal irritation, are perhaps the best diagnostics ; when discovered, it may be evacuated by the lancet. Sometimes you have great collapse of strength occurring before delivery, and getting gradually worse after ; this is caused by the extensive bruising of the softer parts, the patient generally sinking in twelve or twenty-four hours after the birth of the child ; here you may try stimulants, or whatever tends to keep up the strength ; some-

times, however, the collapse is not so great, and the parts recover themselves, and the woman may get well in a few weeks. Also in these labours, you may have *inflammation of the uterus and adjacent parts*, attended with a white tongue, tenderness of the abdomen, and sometimes a quick pulse. This inflammation is not of very great importance, as it does not seem to affect the peritoneum, but merely the uterus and vagina. *Treatment.* Apply leeches, say twenty or thirty, above the symphysis pubis, followed by poultices applied every two or three hours, give purgatives, and keep the patient a few days on the antiphlogistic regimen; if plethoric, take blood from the arm, say to the extent of sixteen ounces; these will generally be found sufficient to overcome this disease. This inflammation may end in suppuration, but its occurrence is very rare: again, you have sometimes the patient affected with *irritable excitement*, attended with brightness of the eyes, quick and sharp pulse, heat of the skin, the mind very acute, sometimes approaching to delirium, and occasionally terminating in puerperal mania. *Treatment.* Apply twenty or thirty leeches to the temples, remove the hair from the scalp, and apply evaporating lotions, or a bladder charged one-third with ice; purge, and give some preparation of mercury, as calomel, or the pil: hydrargari, so as to act on the liver. Opium may also be given if necessary, combined with ipecacuanha, as in the Dover's powder. Keep the child to the breast, and if the patient be robust, you may take away blood from the arm.

Diarrhœa. As in after floodings, so also in laborious labours, you occasionally meet with diarrhœa. Your *treatment* must consist in astringents, kino, hæmatoxylon, catechu, aromatic confection, any of

these may be given according to the effect produced ; but if you find the purging continue in spite of all your medicines, then you must remove your patient into the country. Solid nourishment will be found more beneficial than liquid.

Retention of urine. Sometimes you are called to women after delivery, complaining of spasmodic pain and swelling of the abdomen : on asking the nurse if the patient passes her urine, she answers, “ Oh yes, she is constantly making water ;” however, by passing a catheter, you find, although the urine is constantly dribbling away, yet the bladder is greatly distended with urine ; or the patient may tell you she makes water in a small stream, and with difficulty ; by passing the catheter you at once detect and cure. Sometimes women are incapable of retaining their urine ; this want of power may be from the pressure of the child’s head on the neck of the bladder, or from the bladder being burst open, or from the detachment of slough laying open the bladder into the vagina ; if no pressure have been made on the bladder, it may be from relaxation of its fibres. The laceration of the bladder is generally caused from want of attention in evacuating it ; as the head descends it becomes greatly compressed, and at last gives way. On internal examination, you find the rent easily enough, and if you first pass a catheter by the meatus, you feel it lying bare through the rent.

Sloughing is also easily known by the symptoms ; the patient cannot retain her urine after delivery ; in a few days the power returns ; very shortly however she passes something like skin, which on being washed, is found to be part of the bladder and vagina, and the retentive power is again lost ; she tells you her urine is constantly dribbling away : you examine, and find an opening caused by the slough, sometimes large

enough to admit one or two fingers ; in cases of this kind, although you may not cure, yet you can greatly palliate ; give diluting drinks, improve the health, keep the vagina clean by tepid ablutions, and let the patient wear constantly a truss of cloths. In rupture of the neck of the bladder, keep a catheter constantly in that cavity, improve the health, and attend to the bowels.

In relaxation of the sphincter vesicæ in a small degree, it only recovers itself in a few weeks, sometimes it may be months. Blisters may be applied to the symphysis pubis, or about the sacrum, if the bladder fail to regain its retentive power. Sloughing of the rectum is rare, yet sometimes occurs, easily known by the escape of feculent matter by the vagina. Again, you sometimes have numbness or paralysis, from pressure on the obturator, or ischiatic nerves, either by the child's head, or instruments. The slighter cases recover of themselves in a few weeks, perhaps days ; but the worst cases may continue for years : and I know of no medicine or surgical operation of any use : attention to the health is the best means I know of. So much then of the diseases of the parts about the pelvis.

On Instruments. These may be divided into two kinds ; viz. *the embryotomic*, or those instruments for the purpose of causing the death of the child, and a reduction of its bulk ; and *the embryospactic*, or those instruments for the abstraction of the fœtus without injury either to mother or child. In using the forceps, pass the blades into the sides of the pelvis, for there is the most room ; and be careful to use them with gentleness. The straight long forceps I consider the best, and with them the perineum is in no danger if you are gentle ; the blades should lock well, and the lower blade be passed up first.

On the long forceps. These forceps are about four-

teen inches long; they are of two kinds, the straight, and those curved laterally. The lock should be loose, so as to admit of conjunction when not exactly in opposition; Smellie's lock will be found the best for this purpose. They should be strong and free from points and edges, and the blades not covered with leather. The use of these forceps is when the head is detained above the brim, generally from large head, or narrowing of the pelvis, front and back; when called to a case requiring instruments, you usually find the system in one of three conditions; collapsed, excited, or calm and vigorous. Before, however, you proceed in the use of the forceps, you must take away blood from the arm, allow the bladder to be evacuated by the natural efforts, or if they fail, use the catheter; if the bowels be loaded, use clysters; more particularly bleed if the softer parts are swelled or rigid, or the patient is in a state of excitement; you must also ascertain the state of the vagina and os uteri; sometimes the parts are rigid; here, you must bleed and wait till they are completely relaxed, or you will bruise or tear. In general, however, the os uteri is wide open, and the softer parts thoroughly relaxed. You must also make out the position and situation of the child, and the nature of the difficulty; generally, either from rigidity, want of space, enlarged or unfavourable position of the head. All this done, and the woman being placed on her left side, close to the edge of the bed, with her feet resting against the bed-post, the shoulders forward, the loins posteriorly, with knees and shoulders approximating; the nurse generally of a portly size, placing herself on the bed, her back propping against the lumbar hollow of the patient. Having warmed the forceps, you prepare to introduce

them ; if straight, you may pass up first either blade indifferently, but if you use those with lateral curve, you must use first that which, when introduced, lies with its concavity towards the symphysis pubis, and its convexity towards the sacrum ; having selected the blade, take the handle of it in your right hand, and slide one or two fingers of your left into the cavity of the uterus, so as to interpose those fingers between the cervix uteri and the child's head on the side of the pelvis. You introduce the blade of the instrument, and gradually, gently, and without giving pain to the woman, work it into the side of the pelvis till it meet with the face or occiput of the child, over which it glides ; the handle is now resting on the perineum, the blade of the instrument facing towards the umbilicus ; having then fixed the first blade ; you secure it with the thumb and last two fingers of the left hand, afterwards passing the two remaining fingers to prepare the way for the second blade ; this you introduce by laying hold of the handle in the right hand, and having interposed the fingers before the os uteri and child's head towards the back of the pelvis, so that the back of them may rest upon the sacro-iliac synchondrosis, you pass the blade along the fingers in the back of the pelvis till you get it about half way to its destination, when you with gentleness carry it in a lateral direction until you have completely transferred it from the back into the side of the pelvis ; then carry it upwards till you get it over the child's head, the handle like the former, resting on the perineum, and the blade facing towards the umbilicus ; being brought as near as may be into apposition with each other, and having locked them, you may now, if you think proper, tie the handles together with ribbon, but not so as to cause the blades to press

heavily on the child's head. You may pass the second blade by the side of the pelvis, if she lie close upon the edge; but very often some portion of the bed furniture is in your way; in this method, take care not to include, during the junction, either the patient's linen or perineum. Having secured the head,

wait for a pain, and then draw down gently in the axis of the pelvis, swaying the instrument a little from side to side during its continuance; as soon as the pain ceases, you also cease; allow the head to retract, and so on, co-operating with the pains, until you have brought down the head. Always examine the pulse during the absence of each pain; if you find it rise after allowing time for the muscular exertion to subside, beware, for contusion is to be feared; if under 100 in the minute before you use instruments, and it rises to 130 or 140 during their use, contusion is indicated. Sometimes, however, you have no pains; here you must imitate them in your drawing down. Many efforts are not usually required to bring down the head before the brim; if it cannot be brought down by five or six pulls, you had better resign the attempt, at least for a time; wait, allow the head to mould itself, and perhaps you find little difficulty in a few hours afterwards; the difficulty generally lies only at the brim, so that when once you have got the head through, the delivery is easy enough, and you may either do without the forceps altogether, or you may apply them over the ears, or as I myself prefer; keep the forceps in their original situation over the face and occiput, support the perineum with one hand, and draw gently down towards the mons veneris with the other; but if the natural efforts are sufficient alone, I refrain from further assistance with this instrument; the thumb and two fingers are suffi-

cient to hold the handles in this state of delivery. Be careful to avoid committing the *great error* of using too much force; do not be tempted to use violence because you have got a firm hold of the head.

Special Errors. Avoid passing the forceps front and back, instead of the sides of the pelvis; avoid continually grasping the head between the blades of the forceps; avoid hurrying away the head; avoid drawing in the wrong axis of the brim; lastly, avoid bringing away the head, without any regard to the perineum.

LECTURE XXIII.

On the Lever. The lever is of more importance to the general practitioner than either the long or short forceps, and I more particularly recommend it to you. It is an instrument invented to draw down the child's head, and can be applied either to the occiput, or side of the head; you gain an advantage by applying it to the side of the head, for while the instrument is on one side of the head, you can place two fingers on the other, and by that means get a firm bearing. It in form somewhat resembles the single blade of a pair of forceps, and is about thirteen inches long; the handle should be large and rough, so as to yield a more tenacious hold; the blade wide, the shank strong, and must screw into the handle: the curve should be rather bold, as it then becomes fitter for your purpose; or you may have two blades to screw into the same handle, one more incurvated than the other. The lever used by the late Dr. Low-

der I believe to be the best, and as such I recommend it to you. This instrument may be used in a variety of cases, as it will reach the head above the brim ; not to confuse you, I will confine its use to one case only, namely, narrowing of the pelvis front and back. Before you proceed to use this instrument, let the bladder be evacuated either by the natural efforts, or the catheter ; if by pressing on the rectum from the back part of the vagina you find it loaded, empty it by clysters, and if they bring on pains, so much the better ; you must also ascertain the state of the softer parts ; if the os uteri be nearly shut, if the softer parts are rigid, you bruise and tear if you attempt to act ; but if, on the other hand, the os uteri is wide open, and the softer parts are thoroughly relaxed, then you may proceed to use the instrument without danger. Make out also the presentation of the child ; generally the vertex is the presenting part, known by its roundness, softness, sutures, hair, and fontanells ; sometimes also you can feel the ear. By feeling the fontanells you make out the position ; the smaller, of triangular shape and small size, having three sutures concurrent, points out the position of the occiput ; the larger of diamond shape and large size, having four sutures concurrent, points out the situation of the face. Well, supposing all this done, you must now place your patient in a proper position, let her lie on the left side, close to the edge of the bed, with her feet resting against the bed-post—in fact, in the same position as required when using forceps, and place the nurse at the woman's back, to keep her still. You must also have a pillow and a low chair, so that you can either sit or kneel ; you now pass up all the fingers of your left hand over the occiput, and if the parts are thoroughly relaxed, there is no difficulty in

this ; then with the instrument in your right hand you glide it up to the side of the occiput, withdraw your fingers, and lay hold of the shank just above the handle; still grasping the handle with the right hand, you gradually place the instrument over the back of the occiput into the side of the pelvis, its introduction occupying five or ten minutes ; having got a bearing on the occiput, you grasp the handle with your right hand, and the shank with the left, and drawing down with the pains ; when they cease, you do so also ; passing the instrument generally brings on the pains : should the instrument slip when you are drawing down, replace it, and get a firm bearing on the child's head, but avoid making a fulcrum of any part of the mother. By repeated efforts, according to the difficulty, you get the head through the brim, and then generally it comes forth of itself ; should, however, there be want of room, you must ascertain the position of the face, and then passing all your fingers over the face, you slide up the lever, so that the chin may lie in the fenestra or opening between the rim ; withdraw your fingers, lay hold of the shank as before, till gradually and gently you work in on the side of the head, so that the ear may lie in the fenestra. You then place your two first fingers on the other side of the head, and grasping the shank with the thumb and remaining fingers, you draw downwards and forwards, taking care to avoid injuring the perineum. In the use of this instrument there are certain *errors* to be avoided. First. Introducing the lever before emptying the bladder and rectum. Secondly. Using it during rigidity of the softer parts. Thirdly. You may err in applying the lever ; remember it is used in two modes, over the occiput at the brim, and to the side of the head at the outlet. Fourthly. Using too much

force, endangering rupture of the vagina. Fifthly. Drawing down continually, or constantly pressing on the cranium when not drawing down ; these are the principal errors to be avoided. If the pains should not come on, the *secale cornutum* might be used with advantage.

On the short Forceps. You have the lever and long forceps to seize the head above the brim, and the short forceps when it is below, or at the inferior aperture. This instrument may be applied either to the sides of the head or over the face and occiput. There are different varieties ; some are narrow and laterally curved, as those of Dr. Hamilton ; others straight and narrow, as those of Dr. Orme ; but the best are those of the late Dr. Haighton, made straight, with large fenestra, and the limbus or rim thin, so that the protuberance of the parietal bones lie in the fenestra and cause no addition of bulk to the head, which the others do, for the fenestra in them is so narrow as not to admit the parietal protuberances. The cases in which these instruments may be used, are these ; when the occiput is at the outlet, or when the face is on one side and the occiput to the other, or when the face is lying forward, and the occiput is resting in the hollow of the sacrum. When the occiput is lying under the arch of the pubis, and the face in the hollow of the sacrum, you take one of the blades of the forceps, and if you use the straight ones, choice is unnecessary ; and pass up two fingers of the left hand between the vagina and child's head on the left or under side of the pelvis, so as distinctly to feel the ear ; then with the right hand pass up the blade between the fingers and cranium, placing the point in the chin and the lock over the vertex, and keep it there with the thumb and two fingers ; you

now pass up two fingers of the left hand between the vagina and cranium in the upper or right side of the pelvis, and then with the right pass up the other blade, and bring it in apposition with the former, taking care not to include any portion of the perineum. When you have pain, draw down with gentleness; you need not press harder on the head than if you used merely the thumb and finger; if you do this, you need be under no fear of the head, as it will turn of itself. You cease with the pain; on its return you again draw down, and so by little and little you bring the head away; be careful to draw forwards towards the pubis as much as may be, for then the perineum is in less danger of laceration. When the face lies forward, you apply the forceps in the same manner as before, the lock on the vertex, and the point over the chin; when you have got a good hold, depress the chin upon the chest as much as possible, and draw down, leading the occiput as much as may be towards the pubes, and taking great care of the perineum. Another mode is by rectifying the position of the head: the head being secured as before, you gradually place the face to one side of the pelvis, and the occiput to the other, and gradually and by degrees you at last get the face into the hollow of the sacrum. This, if it can be done easy, is the better mode; again, when the face is lying to one side and the occiput to the other, and forceps being required, you may apply them in two ways; you may apply them in the sides of the pelvis, over the face and occiput, and gradually place the face in the hollow of the sacrum, and the occiput under the arch of the pubes. Or a second and perhaps the better method is to place them over the sides of the head in the usual way, placing the first blade between the cranium and front of the

pelvis, and the second behind, and having secured the head, gradually place the face in the hollow of the sacrum, and the occiput under the arch, guarding at the same time the perineum. Be careful not to turn the face in front of the pelvis instead of behind; if you do, you get the very difficulty you wish to avoid.

Rules to know when to use any of these instruments. Some judge by symptoms, as tenderness of the abdomen, rise of the pulse, collapse of strength, &c. Others again by the length of time elapsed since the discharge of the liquor amnii. If the woman has not been in labour twenty-four hours after the discharge of the liquor amnii, and no dangerous symptoms are manifesting themselves, you need not interfere; if on the contrary, she has been in labour more than twenty-four hours after the discharge of the liquor amnii, or if dangerous symptoms are manifesting themselves, then at once deliver.

LECTURE XXIV.

The embryotomic Instruments of which I am about to speak are, the perforator, the crotchet, the craniotomy forceps, and the blunt hook. The use of the perforator is to puncture the cranium by a semi-rotatory motion, and then by separating the blades to enlarge the aperture by dilitation. The first instrument of this kind was a pair of large scissors, invented by Smellie, but being without shoulders, was, I conceive, except in cautious and dextrous hands, a most dangerous instrument. The instrument as now used opens and shuts like a pair of scissors, but has

no cutting edge; it ought to be made large, round, and strong in the shanks. The joint to be very firm, for occasionally the head is ossified, and requires great force, and to have only one point. About an inch and a half from this the shoulders are placed, which must be round and smooth, so as to prevent the instrument from being pushed any farther. The craniotomy forceps is a very old obstetric instrument, but superseded for a long time by the crotchet, again revived by Dr. Haighton, and since then much improved. It is an instrument intended to pull down the head when punctured by the perforator; one of the blades is applied to the internal, the other to the external surface of the cranium, and if you use the instrument as perfected by Mr. Holmes, of Old Fish Street, you gain a very secure hold, as it is furnished with large and strong teeth in one blade, and corresponding depressions in the other, so that when once the cranium is included between the blades, it is impossible to slip, because the teeth pierce completely through the bone. I prefer them with a moveable joint, like the common forceps, and if you can have two pair, so much the better.

The crotchet is another instrument also intended to pull down the head after perforation; it has a large handle, a strong and curved shank, and a broad hook, bluntly pointed; it may be applied externally, but in general is used internally; you may pass it into the cranium, and fix it where you can; it is more secure perhaps about the sella tursica. This instrument often slips, and requires to be carefully guarded by the hand, lest it injure the woman. The blunt hook ought to have a large handle, strong shank, and the hook without any point whatever; the cases requiring the employment of these instruments may be divided into two varieties, namely, the slighter

contracted pelves, and those contracted to a high degree. First then of embryotomy in the slighter contracted pelvis; if you are in the habit of using the long forceps, you will no doubt have done so before attempting the destruction of the child; should they happen to be still applied, leave them there, and close the blades as forcibly as possible, so as to reduce the child to a state of torpor, and tie the handles of the instruments together; you then, having placed the woman on her left side in the usual position, pass up two or three fingers of your left hand, and feel for the sagittal suture, generally easily felt; then taking the perforator in your right hand, you glide it along your fingers to the suture, and by a semi-rotatory motion pierce the cranium, push the instrument onwards as far as the shoulders, and then without a moment's delay separate the blades as much as possible, so as to make the rent as large as you can. In general, one perforation is sufficient; should you not, however, be satisfied with the opening, you may introduce the instrument again, and make a second opening near the other; then take the crotchet or craniotomy forceps, and break down and pulpify the brain, more particularly the basis, for there I conceive vitality chiefly exists; if you don't do this completely, the child might come away alive, and live for several hours with its brains hanging out, the very thought of which causes horror; I must also tell you to proceed as rapidly as you can with safety. Well then, having thoroughly broken down the texture of the brain, and being anxious to complete the delivery, you may occasionally accomplish by the long forceps; but as the head collapses, and the bones become displaced, this instrument very often slips, without the contraction be very small. If the forceps

fail, then take the craniotomy forceps in your right hand, and having introduced two fingers of your left, one internal, and the other external to the cranium, you adjust the instrument with these two fingers, and place one blade within, and the other outside the cranium; before closing them, examine that you have included no part of the mother; close them gently, and if the woman complain of pain, immediately stop, and again examine: having closed the blades firmly, so as that the teeth of the instrument pierce the cranium completely, you draw down in the proper axis, co-operating with the pains, if there be any, for they are powerful adjuvants. In using these forceps, be prepared for a piece of bone coming away; place all your fingers in the vagina, in apposition to the instrument, so that should a part of the cranium come away, your hand, and not the woman, suffers by it: if you find a piece of bone loose, twist it off, and bring it away, and again apply the instrument as before. If you have two pair, and the head is high above the brim, you may apply one pair first to any part within reach, and draw down the head as low as you can, when you can apply the second pair with great effect to the cranium, which before was impracticable; this done, you may bring the first pair away: should the craniotomy forceps fail, the crotchet may be tried; you introduce it with your right hand under the guidance of your left, and move it about on the cranium, till you secure a firm hold, either of some part of the base, or upper portion of the skull. In drawing down with this instrument, always protect the point with one or more fingers of your left hand, for it is apt to slip, and without this caution might injure the woman. Another expedient is the extraction of the cranium by the fingers. You may lay hold

of the scalp and draw down all the bones together, causing them to occupy but a small space, and if you happen to be strong in the fingers, you will often succeed after the crotchet has failed. Should the shoulders cause any difficulty, you may either abstract the arms with the fingers, or now, as the child is dead, you may use the blunt hook ; having drawn the shoulders to a level with the outlet, you pass the hook over the auxilla, and draw down first on one side and then on the other, and so bring down the arms. Should this fail, then the only method is to detach the arms from the trunk, and lay open the chest and abdomen, rarely however necessary, for having opened the head, and taken off the pressure from the softer parts, you may wait, and allow the woman to repose ; if she be very irritable, take away blood from the arm ; give from forty to sixty drops of the tincture of opium, and perhaps in a few hours you find that the body is much lower in the pelvis, and at last causes but little difficulty. The highly contracted pelvis may be managed on the same general principles as the preceding case, but you must decide in the early part of the labour to operate, if absolutely necessary, as then you can proceed more gradually, the woman not being worn out with unavailing efforts. After completely laying open the cranium, and pulpifying the brain, you may wait for putrefaction, if circumstances permit, and you may then take away all the bones of the cranium by laying hold of them with the craniotomy forceps, and twisting them off—easily accomplished, for the bones become loose, and the connecting parts soft by putrefaction. Should the woman be irritable, face flushed, and the pulse hurried, you must, as in the preceding case, take away blood, give opium, and leave her to repose. This you may do with safety, as

you have taken away the pressure of the head on the softer parts; then, after the lapse of a few hours, say six or twelve, pains may come on and expel the child; if not, you must assist them by means of the craniotomy forceps, or crotchet. You must place the base of the skull parallel to the symphysis pubis, with the face upwards. As in this position with the face descending, the head occupies the smallest space, if this operation has been properly performed, women in general recover very rapidly.

The rule whereby you are to judge of the necessity of the perforator. You must know she has no other chance; if the woman has been in strong labour, thirty-six or forty-eight hours after the discharge of the liquor amnii, or before any dangerous symptoms are beginning to appear, if the head has made no progress, or if convulsions come on, and do not cease from bleeding; or if you have abdominal tenderness, rise of the pulse, collapse, &c. If you have loaded bladder, and cannot empty it by the catheter, then deliver, (if the lever and forceps have been tried in able hands and failed,) by laying open the head. In these contracting pelvises there is another mode of delivery besides instruments, namely, premature parturition. In these cases labour may be brought on at the end of seven months, or seven months and a fortnight, for then the child can support life independently of the mother, and being much smaller than at the full term of gestation, the delivery is consequently less dangerous; so that if a woman has had three or four children, and all born dead, you are warranted in bringing on premature parturition, by rupturing the membranes either with the finger, or any blunt instrument; in general, labour comes on in twenty-four hours after the discharge of the liquor amnii; remem-

ber however, that, although the child is smaller, and the delivery less dangerous than at the full term of nine months, yet it is often lying preternatural, and after all, you are obliged to destroy it; be careful therefore of promising too much. In these cases also it is desirable to know whether or not the child is dead. Flakes of cuticle may come away in large masses; this is only a presumptive sign, but if the bones of the cranium be completely detached, and you feel them floating in the semi-fluid brain, like nut-shells in a bag, you may rest assured the child is dead; mere mobility of the bones without displacement proves nothing, for I have seen several cases in which children were born alive, though there was great mobility of the cranial bones. Again, if you can feel the umbilical chord, you are able to judge as to the life of the child. If the chord fail to pulsate for half an hour together, if you find it cold, flaccid, and of a brown colour, rest assured the child is dead; temporary suspension of the pulsation proves nothing; neither are you to believe the child to be dead because the mother has not felt it move for some time, for the child may lie quiet for weeks, and yet be born alive. If you find the scalp emphysematous, if you have foetid discharge from the uterus of a dirty green colour, or the abdomen of the child tympanitic, you may venture to infer that the foetus is dead. So that by these five indications the death of the foetus is known—by the breaking up of the contexture of the cranium, by the change of colour and want of pulsation in the chord, by the emphysematous state of the head, by the foetid discharge from the uterus, and by the tympanitic state of the abdomen.

LECTURE XXV.

On the particular varieties of laborious Labour. If we take a practical survey of the different forms of laborious labours, we shall find them arising from one of three causes; namely, rigidity of the softer parts, deficiency of space in the pelvis, and unfavourable position, or unnatural size of the child's head. In general the head presents by the vertex, but it sometimes happens that the face is the presenting part; this may be expelled by the natural efforts, or the forehead may present—this however soon changes either to the vertex or face presentation, or the face may lie forward all through the labour. Supposing the face presents, there are several modes of delivery, by turning or rectifying the position of the head, or the natural efforts may be sufficient, or instruments may be required: you may slide the lever over the occiput and rectify the position; in rare cases turning may be required. When the vertex presents with the face lying forward, it may be rectified either by pressing on the side of the head with the fingers, when the woman has pain, or by giving it the proper position with the forceps.

Turning, as a general practice in these cases, is to be condemned, for it would often be had recourse to unnecessarily, and must always be attended with more or less risk; it is at best but a clumsy operation, but one to which we are obliged to have recourse occasionally. The great majority of face and vertex presentations, if time be allowed, are expelled by the natural efforts; should they fail, then the lever or the forceps must be tried; if they also fail, then open the head; your rule is, if the woman has been in labour thirty-six or forty-eight hours after the

discharge of the waters, and the head has made no progress, then take your perforator and open the head, or sooner if dangerous symptoms are beginning to appear ; want of room in the pelvis may be from fracture of the bones, rickets, or molles ossium. This kind of pelvis makes a great show in the museum, and you hear a great deal said about them, but they are comparatively of rare occurrence. In the slighter degree they are much more common ; the contractions in a high degree will be made out on the first examination. In these cases there are two modes of delivery, namely, by embryotomic instruments, and the cæsarean operation ; to decide which is necessary, much will depend on the skill of the surgical attendant, and on the instruments ; but if there be a clear space throughout the pelvis, three inches in length, and one and three-quarters in breadth, embryotomy will make the head small enough to pass. If, however, the length and the breadth be less than this, then the cæsarean operation must be performed. More common you have the slighter contraction front and back, easily discovered by the pelvimeter. I would recommend you, if called to a case of supposed narrowing, to ask the patient how long she has been in labour ; if she has been in strong labour many hours after the discharge of the waters, and the head has made no progress, then it is highly probable that narrowing exists. Again, if the woman has had three or four children born dead or with difficulty, in general, narrowing exists. You feel for the promontory of the sacrum ; if very easily felt by the finger, narrowing exists ; then examine the head, if you find the scalp greatly swelled, and the parietal bones overlapping each other, then no doubt narrowing exists, the head becoming converted into an excellent pelvimeter.

Suppose you are with such a case, what would you do? Some say, deliver by turning, others trust to the natural efforts, others use the forceps, others the perforator. I don't like turning, it is a clumsy and unwieldy operation, as well as unnecessary; and when you have turned, you get the body away, but the head still remains; you may pull at this certainly with greater force now than you could before, but you can also pull the head from the body, and leave it behind in the uterus. I recommend you first to try the natural efforts, but not too long, as you may have slough from pressure, bruising of the softer parts, or rupture of the uterus. Well then, after giving a fair trial to the natural efforts and they fail, then try the lever or the forceps; if they also fail, then open the head, proceeding according to the rule I have so frequently repeated. When the head is low down, and lodged among the bones of the pelvis, it is called the incarcerated or locked head, giving rise to bruising, inflammation, suppuration, and sloughing, from the great and continued pressure on the softer parts in the pelvis; the parts below are apt to become swelled and inflamed, and ultimately slough; the bladder also is liable in these cases to be burst open. If the pressure be so firm as not to allow your finger to be insinuated between the pelvis and the child's head, if the bladder be loaded, the natural efforts fail to evacuate it, and you also fail with the catheter, if the parts below are swelled, then deliver immediately; first, by gently trying the lever or forceps, and they failing, then take the perforator and lay open the head.

Again you have laborious labour from rigidity of the softer parts, very apt to occur in the country, and especially in the middle and upper ranks of life, where females marry at forty or even after that age.

It may occur in young women, but generally in strong, robust, and healthy women, who bear their first child after the middle age ; however, this is not always the case. The great characteristic is firmness, dryness, and contraction of the vagina, and the os uteri being hard, firm, and in a great measure closed. The action of the uterus is often very violent ; the child is pushed with great force against the resisting parts, to the danger of bruising or tearing the perineum and neighbouring parts ; very often also the child is dead.

Treatment. If robust, take away twenty, twenty-four, or thirty ounces of blood from the arm in the commencement of labour. Avoid all stimuli ; the ergot of rye must not be given, as it is not pain, but relaxation you want. When the head has descended low down in the pelvis, foment the parts assiduously with hot water and flannels for several hours together, and should the parts still continue rigid, you may take away eight or ten ounces more of blood. Some have recommended taking away thirty, forty, or even fifty ounces, but I think the quantity before stated to be quite sufficient ; others again have recommended the warm bath, but this is more applicable to an hospital than the private chamber. Emetics also have been highly spoken of, but I think in general, fomenting the parts and taking away blood from the arm will be the best means you can employ.

In these cases of rigidity, there are three modes of delivery. First. By the natural efforts. Secondly. By the lever or forceps. Lastly. By embryotomy. First, give a fair trial to the natural efforts, but not too long ; for very often the foetus is dead, and the mother in danger from bruising and extensive sloughing of the softer parts ; examine the pulse ; if it rise to 120 or 130 in the minute, always apprehend contusion. If

the softer parts are moderately lax, so as to give way by dilatation, or with very little laceration of the perineum, you may attempt to deliver with the forceps, if the woman and her friends are particularly anxious for the child to be born alive, but you must never use the forceps without first explaining to the party the risk to the mother, and that even when you have brought away the child, it may be dead. Perhaps the woman is about the age of forty, and this is her first child, an entailed estate may depend on its being born alive ; then, if the woman and her friends urge you to act, if the parts have become so relaxed, that you think you can bring away the child with but a small laceration of the perineum, do so : in general, however, after having waited as long as symptoms admit, you must have recourse to the perforator. When the head emerges at the outlet, be very careful to guard the perineum from laceration ; this you do by placing the left hand on this part, and supporting it when the uterine pains push down the head, so as to endanger it, and resist the advance of the head with the right, but only as long as the safety of the perineum requires, for rupture of the uterus may be the result of persevering in the hindering the birth of the head ; also tell the woman to avoid bearing down voluntarily. Always have your tracheal pipe and other means for resuscitating the child in readiness in these cases of rigidity. The *errors* to be avoided are the following. Giving the ergot of rye ; having recourse to the embryospastic instruments without due consideration ; allowing the labour to go on too long without terminating it, endangering sloughing. You may have laborious labour from toughness of the membranes : they may be firm and unyielding as a bullock's bladder ; and although the os uteri be fully dilated, and the waters pushed

down into the vagina, yet the membranes remain unbroken, and may impede the labour. When the woman has pain, you bear upwards against the child's head on the membranes, now tense and distended, and you will seldom fail to rupture them : but if this method fail, you may notch your finger-nail, and scratch through them ; if you also fail in this, then take the perforator and puncture them. The loaded bladder may be pushed down behind the symphysis pubis and before the child's head, and may be punctured for the membranes, but if you examine carefully you find the head above and behind this bag, and if you introduce a catheter into the meatus you find it to be the bladder, by the flow of urine allowing it to collapse. Labour, it is said, may be rendered laborious by the shortness of the umbilical chord ; the usual length is from two to three feet, occasionally much longer, but Dr. Haighton met with a case in which the chord was only seven inches in length. The shortness may also be caused by its being wound round the child's neck several times. This shortness of the chord, however, I believe rarely impedes labour. It sometimes happens that the coccygeal joint is ankylosed at right angles, giving rise to great difficulty in the passage of the child. You may detect this ; by passing one finger internally to the coccyx, and placing the thumb externally in apposition with the finger, you feel the bone through the softer parts immovable. If the natural efforts fail to fracture this ankylosed joint, you must have recourse to the same treatment as in narrow pelvis. Labour is often difficult from its being the first child—the parts having never been dilated before, and more especially if verging towards forty. Should the patient or friends become impatient at the slow progress of the labour, you must tell them it is the common

course of nature to be so. These cases are very undesirable to a young beginner, for they are always attended with danger : the treatment I have before given. Occasionally also the foetus may be of large size, weighing twelve, fourteen, or even seventeen pounds—causing difficult labour ; but it is ten to one if you make this out by examination. The case is still worse if the head be ossified. You examine the sagittal suture, and find it closed, firm, and hard. Both these cases must be treated as in deficiency of space in the pelvis. The head may be hydrocephalic : this is easily recognised ; you find the labour is making no progress,—you examine and find the sagittal suture very wide, the parietal bones being separated perhaps to the extent of three fingers' breadth, and giving to the feel an evident fluctuation. In this case must you turn ? Certainly not. If you do, you run great risk of rupturing the vagina, and after all derive no benefit from the operation. Try the natural efforts ; and these heads being very yielding, will often pass : should they fail, then you may use the lever or the forceps ; but these are apt to slip ; if so, then you must puncture the head, and evacuate the fluid. Remember, however, that the puncture must be small, for the child has a chance of living. Sometimes you have an arm descending with the head ; here you may push the arm back again, and pass a piece of sponge into the uterus, which will prevent it from again protruding ; or you may press it into the side or back of the pelvis. If the pelvis be narrow, then the arm will be very much swelled and discoloured, but speedily recovers after birth. Should the chord descend, you use the sponge as before to prevent it from again protruding.

LECTURE XXVI.

Anomalous Labours. Women generally bring forth but one foetus at a time, but occasionally two or more are produced ; about one in sixty-one is a twin case.

Signs of twin cases before parturition. The abdomen perhaps is heavier and larger ; but this may also be caused by enlarged liver, spleen, ovaria, or from an increased quantity of liquor amnii ; or she may be very hollow in the loins, and carry her burthen very forward. Secondly. The abdomen enlarging with unusual rapidity ; but this may be from the rapid accumulation of the liquor amnii : the children may occasionally be felt in different parts of the abdomen, but this is liable to deception, for it may be a very large foetus, and the head moving on one side and the feet on the other ; or there may be a separation of the uterus into two parts, one foetus lying on one side, and one on the other : If the woman lie in the recumbent position, you may feel a separation between the children, and perhaps the woman tells you that she feels the womb separate, one part falling to one side, and one to the other. Lastly. By means of the stethoscope ascertaining the pulsations of the foetal heart.

During parturition. Having distinct gushes of water, but this is not much to be depended upon. Dr. Hull met with a case of five children, and also five distinct gushes of water : it is said, if there are two foetuses, the first will make very slow progress, but this is uncertain ; the best indication is the protrusion of the different parts of both foetuses, as two right arms ; after the birth of one child, the uterus ought always to be examined externally ; and internally if you find

on external examination the uterus as large as before delivery, when you feel the bag of waters protruding, or should they be broken, some part of another child, as the arm, head, or foot. Sometimes, however, the membranes of the child lie over the mouth of the womb, and contain clots of blood, which, when protruded a little into the vagina, feel like the surcharged membranes of another child; but on being broken, blood alone comes away; also the uterus is much smaller than if it contained another child. If there be no second child, the uterus is collapsed, and can be grasped through the abdominal coverings, being about twice the size of the foetal head; or should the abdominal parietes be very lax, you may by pressure feel the promontory of the sacrum. On internal examination you feel neither membranes nor foetus. If there be a second child in the uterus, let the woman rally, then break the membranes, and examine the presentation, for the second child often lies preternatural, and requires turning. If the arm be the presenting part, turn immediately, for the uterus and softer parts are thoroughly relaxed, and if you wait, the uterus contracts, and renders the operation more difficult. If the feet or breech be the presenting part, proceed as formerly described in those cases. If the head should be the presenting part, and situated low down in the pelvis, the natural efforts failing, you might use the lever or forceps. In extracting the placenta, twist both the chords together, draw down with the left hand, and laying hold of the substance of the placenta with the right, you sway it a little from side to side, drawing gradually during the pain till you get it away, beginning about an hour after the birth of the last child. Sometimes both placentas are joined together at their margins, or both the chords come from one

placenta. After you have brought away the placenta, examine it carefully, to see that you have left no part of it behind in the uterus. After the birth of the first child, you should bind up the patient's abdomen, and as soon as the second is born, you must tighten the bandage. Be careful to make the uterus contract, for after-floodings are not uncommon in these cases. *Errors.* Drawing away the placenta before the birth of the second child ; neglecting to bind up the abdomen ; neglecting to ascertain if there be another child ; and lastly, neglecting to examine whether the uterus be inverted or not. There are two operations by which the child may be extracted when delivery is rendered impracticable by the natural passages, viz.

The Cæsarean operation, and the section of the symphysis pubis. Now, when it is known beforehand that the pelvis is so contracted that the child cannot be brought away, even after the head has been reduced in size by craniotomy, the sooner the cæsarean operation is performed (provided you have the cordial assent of your patient) the better ; for if you delay the operation, collapse of the strength, extensive bruising of the softer parts of the mother, and death of the fœtus, from the long-continued pressure on the head, are the results. And it is to this cause of operating early, I conceive the continental surgeons are indebted for their success. If you have not a clear space throughout the pelvis, three inches in length, and one and three-quarters in breadth, the cæsarean operation must be had recourse to ;—a dreadful, yet, if you possess ordinary talent, not very difficult operation, as all the parts lie directly under your eye. Well then, the operation being deemed imperative, and the consent of the woman being obtained, and having emptied the bladder, and also the bowels if loaded, you place

her in the recumbent position on the edge of the bed, with her head and shoulders a little elevated, her legs hanging over the edge of the bed, and resting on the floor or a low stool; place an assistant on each side, to secure the patient, should it be necessary. Having placed the body in a proper position, you take a sharp double-edged scalpel, and make a longitudinal incision, six inches in length, through the abdominal coverings on the left side, on the inner edge of the rectus muscle, and below the navel, cutting through the integuments, adipose membrane, the sheath of the rectus in front, the muscle itself, the sheath behind, and lastly the peritoneum. The uterus is now brought to view, of a dusky red tint, which must be laid open to the same extent; this done, you rupture the membranes, search for, and lay hold of the feet, bring away the child by turning, and the other immediately after, should there be twins, then finish by bringing away the placenta and membranes; the womb instantly contracts and sinks into the pelvis, the intestines during expiration, protruding through the wound, these must be replaced and the wound closed by gastroraphy, and then covered over with simple dressing. It has been proposed to make the incisions transversely; but this would cause the knife to open the large vessels in the side of the uterus, endangering internal hemorrhage: you might also divide the epigastric artery. To prevent the woman from again becoming liable to this operation, you ought, before closing the wound, to search for and bring to view the fallopian tubes, first upon the right side, and then on the left, and clip out a portion of each—say one-eighth of an inch, taking care to avoid wounding the large vessels, and by this means remove all future danger, by making her sterile.

Section of the Symphysis Pubis has been proposed as a substitute for embryotomy and the cæsarean operation, but as it is an axiom in British midwifery to sacrifice the life of the child to the safety of the mother, it can seldom be required. If the mother demanded the risk to save her child, and the welfare of millions depended on it, then it might be justifiable. The operation is performed by making an incision through the skin and adipose substance and the cartilage connecting the two ossa innominata together in front, so as completely to divide it, avoiding at the same time the urethra and bladder; the bones must now be separated one, two, or three inches, for simple division of the joint produces no enlargement; but this is an operation of considerable pain, from the stretching of the parts within the pelvis, as well as the sacro-iliac synchondrosis, and is, I believe, more dangerous than the cæsarean operation itself; and after all, if the pelvis be much distorted, although you may have separated the bones three inches apart, yet the child cannot pass without the greatest difficulty; it is not unlikely that you will have to lay open the head, and it is not improbable that in some of these distorted pelvis ankylosis exists between the different joints, so that the operation cannot be performed at all. But in cases of this description, where the child cannot be brought away alive, and the life of the mother is in great danger, if not lost also, the labour should be brought on before the full term of gestation, according to the difficulty known to exist. This may be done by giving the ergot of rye, or should it fail, then you may introduce a female sound into the vagina, pass it through the os uteri into the uterine cavity, and break down the structure of the ovum, at the risk however of

hemorrhage; but justified, because less dangerous than the cæsarean operation. In these worst cases the os uteri cannot always be felt; here, you must take a small trocar and canula, and having made an incision one inch in length above the symphysis pubis, you push the instrument into the uterus, rendered steady by the finger; withdraw the point of the trocar within the canula, and break down the ovum, by moving the instrument about in every direction; you may now draw out the fallopian tubes, and take away a portion of each, rendering her sterile. The best means however of avoiding all these dangers is by abstinence altogether from intercourse with the other sex. Should hemorrhage come on, you must employ the means formerly mentioned in flooding cases; should transfusion be required, it may be performed in two ways, namely, by the syringe and the gravitator.

By the Syringe. Take a scalpel and lay bare the median vein an inch in length; then take a lancet and slit up the vein about one-eighth of an inch, taking care that you do not pierce the vein through on both sides; and having got a person to supply the blood, (a male if possible) you tie up the arm and open the vein in the usual manner, making the aperture rather free; having also got the syringe ready, fit on the nozzle a receiver for the blood, so that it may flow from the arm of the supplier into the syringe, and having passed the probe under the woman's vein, so that an assistant may compress it if any blood flows upward, you now introduce a tube about half an inch into the vein, directing it upwards towards the heart. The syringe being full, you depress the piston so as to cause about a dessert-spoonful of blood to flow, that no air may lodge, first taking off

the receiver ; you now place the nozzle of the syringe into the tube in the arm, and gently, so as much as possible to resemble the natural flow of the blood ; you depress the piston, and force the blood from the syringe into the vein, say about two ounces at a time ; in this, however, you must be guided by the effect. While depressing the piston, watch the countenance of the patient ; if the lip quiver, if the eye flicker, or if you have restlessness or vomiting, wait—allow these symptoms to subside ; but if they are absent, then proceed more boldly. The nicest point of the operation is the injection of the blood ; if you inject too quick, your patient dies immediately ; if too slow, she dies ; imitate as much as possible, the natural flow, slowly, gradually, gently : carefully watching the countenance, you proceed to empty the syringe ; you may in this manner throw up four, eight, ten, or even sixteen ounces ; an average quantity, I should say, was about eight ounces ; before you allow the blood to be collected in the syringe, always pass warm water through it, so as to bring the syringe to the temperature of the blood ; and if you have to wait before the syringe is emptied, throw this out, and wash out the syringe before you again proceed. Be careful also to make a sufficiently large orifice in the vein of the person supplying the blood, for if the opening be small, the flow of blood is consequently slow, and becomes too deteriorated for use. Always depress the piston before using the syringe, so as to cause a small quantity of blood to flow out, for by that means you will avoid injecting air into the vein ; which, although a very small quantity is not necessarily fatal, yet it is highly dangerous.

The gravitator is made of brass, and by means of joints is flexible, and can be adapted to any

situation; it requires a chair or some other firm substance to be made fast to, but this is its only inconvenience. It requires no screwing or unscrewing; when once fixed, you have no further trouble; by means of a cup on the top of the instrument, the blood is collected from the arm of the supplier, which runs down the flexible vertical tube (connected with it, expelling the air by its own gravity) into the arm of the patient, whose veins are so empty, that they offer no resistance to the flow of blood. By means of a stop-cock, you may allow the blood to flow faster or slower at pleasure, and as the blood from the supplier keeps constantly flowing, air is prevented from entering, I think this by far the best instrument of the two for the purpose. If inflammation of the vein occurs, it must be treated on general principles.

LECTURE XXVII.

The uterus may become inverted, either partially or complete. You may have complete inversion of the womb and vagina, particularly when in the uncontracted state; or you may have partial inversion, a kind of hollowing of the fundus, it being depressed into the body of the womb; but this is far from common. What you generally meet with is inversion of both uterus and vagina. When it has existed for a length of time, you find the sides of the uterus thick, the cavity very small, yet although it may be of years' standing, the sides of the uterus never grow together. If, as soon as the womb is inverted, the practitioner replace it, no bad symptoms will in general occur;

should it be overlooked, and left unreduced, then very often copious hemorrhage comes on. On being called to the patient, we find her lying in a state of great debility, and liable on rallying a little to a return of the bleeding. If she survive for some days, the parts begin to recover of themselves, and after a time the uterus collapses, shrinks within the vagina, and the case becomes chronic. The patient now has monthly floodings; perhaps she thinks that she has miscarried; if not understood, you find the case continuing the same course, notwithstanding all your remedies; perhaps at the end of two years the health gives way from the frequent repeated losses of blood, and at last she sinks: if, however, the disease be discovered by the medical attendant, and he applies a ligature to the uterus as in polypi, and by that means extirpates it, the woman recovers. *Treatment.*

As soon as inversion occurs, so directly you must replace it; never think of waiting for further assistance; at once replace it; for by waiting, you allow the uterus to contract, the sides become thick and hard, the cavity very small, and then, although the best assistance may be now at hand, it cannot be replaced. If the placenta be adherent to the uterus at nearly its whole extent, you must proceed with the reduction with the placenta attached; but if the attachment be only partial, as by one lobe or so, then detach it before you reduce the womb. While you are detaching the placenta, and while the womb remains unreduced, there is always danger of flooding. There are two modes by which the womb may be reduced; you may reduce it by grasping the womb, and beginning the reduction at the neck, and so on gradually with the body, when you finish the reduction with the fundus. For myself, I prefer the second mode, namely, begin-

ning the reduction at the fundus, and pressing it inwards, you easily accomplish this ; whereas in the former mode, by grasping the uterus, you might cause it to contract, which, as I said before, would effectually hinder you from reducing it at all. Formerly great force was used in attempting to reduce the womb, because it was thought that the woman would die were the inverted womb to be left unreduced, but now being much better understood than formerly, this excess of force ought never to be used, because you endanger the rupture of the vagina ; if, as soon as the womb becomes inverted, you press gently on its fundus, so as gradually to depress it, you will, I believe, find little difficulty in replacing it. The cause of inversion is generally from drawing away the placenta before the complete contraction of the womb, more particularly in flooding cases, and in general to be charged to the accoucheur ; rare, however, in British practice. In some cases, the accoucheur may not be in fault, for the intestines may fall against the fundus of the uterus and partly depress it, and the pains may effect the inversion, or it may be from the child being born without assistance ; for where the pelvis is large, few pains may suffice ; the woman may be walking across the room, the child drop from her, and the womb be inverted from the drag on the placenta. Lastly, the womb may be inverted from polypi growing in its cavity.

Rupture of the Uterus, nearly always transverse and opposite to the symphysis pubis or the promontory of the sacrum, very often it is the neck of the uterus ; or it may extend from the neck to the broad ligaments. In rare cases, the same pain which expels the child ruptures the uterus. The uterus may also be burst open, the head of the child remaining

impacted in the pelvis, while the body escapes through the rent into the peritoneal cavity, and can be felt externally through the abdominal coverings; or the uterus may be ruptured from the thinness of some particular part, as where the back part of the womb has been long compressed between the child's head and an exostosis in the back of the pelvis or promontory of the sacrum. The most common cases in which rupture occurs is however in the contracted pelvis, while the child is lying above the brim; the woman complains of cutting, stabbing, lancinating pains, quite different from the true labour pains; she may complain she is torn, or that she has the cramp, the uterus being ruptured at the same moment, a discharge of blood follows; if it be rupture of the neck, then, in general as the vessels are small, a small quantity of blood only is lost. If the body of the womb, then the quantity is greater. On the child escaping into the peritoneal sac, you have collapse of strength, pallid countenance, surface of the body cold, and covered with a clammy sweat, the pulse 140 in a minute, fluttering and feeble, at once denoting what has occurred. The pains which before were severe, are now weak, and only after long intervals; on examination per vaginam, you find the head gone from your reach. The placenta generally follows the child into the peritoneal cavity, so that the child is born there. On examining externally, you feel the different parts of the child. Rupture of the uterus occurring, you are not to suppose the woman must absolutely die, and that you cannot assist her; if the child has escaped altogether into the peritoneal sac, you must introduce your hand, pass it through the rent in the womb, and carry it upward till you feel the feet of the child, which you lay hold of,

(they may be situated about the edge of the liver, or resting against the diaphragm) and draw down gently, at the same time turning the back of the child to the abdomen of the mother.

Again, if you have rupture of the uterus, the head remaining impacted among the bones of the pelvis, you must deliver by means of the forceps; as the uterus cannot assist you, the lever is of no use. Lastly, you may have rupture of the uterus at the same time the child is born; this, is the least dangerous case, for the womb contracts, and very little blood is lost, and perhaps the woman soon recovers. I doubt but the rent will always be large enough to allow the child to pass back again, but if not, if the patient wishes, or gives her cordial assent to the operation, lay open the abdominal coverings, and in that way extract the child. If you cannot gain the consent of the patient, you may suffer the child to remain where it is, the woman not necessarily dying in consequence, for the child may become changed into osseous mass, and the woman live for years.

If you have inflammation of the head, chest, or abdomen, occurring during gestation, they must be treated as if gestation was not going forward; should any of these inflammations come on towards the end of pregnancy, it is not unlikely that your bleedings and other remedies will bring on premature parturition. Sometimes you have inflammation occurring during actual labour; if you find it become aggravated by the continuance of the labour, deliver—if the head be low down, by the lever or forceps, sometimes, though rare, by the perforator. Should the head be situated above the brim, then you must have recourse to turning, however undesirable that operation may be; on the contrary, should the labour be making progress, and the

inflammation not increasing, then, knowing that a meddlesome midwifery is bad, you avoid interference. Sometimes you have fever occurring during parturition; but this is no argument in favour of manual interference; the pains perhaps are not so quick or powerful, yet, on the whole, labour goes on very well; should floodings or any other dangerous symptoms interfere, then you must deliver with the lever, forceps, or perforator, according to the circumstance of the case. If delirious from fever during the latter months of pregnancy, the patient must be carefully watched, for the child may be born in the bed, and the woman be totally unconscious of what has happened. If the fever be one of the infectious kind, be very careful of yourself should you have to turn. In women dead, and the child not born, it becomes a point of great consideration as to whether the child is yet alive; if the woman has died gradually as from lingering disease or repeated floodings, then there is little doubt the *foetus* is dead also, the probability being, that it died before the mother. But if a woman in possession of robust health dies suddenly, as from apoplexy, or meets with an accident causing speedy death, then the child may be resuscitated in half, three quarters, or even a full hour, after the respiration of the mother has ceased. A cow in calf was killed by some accident, and on skinning it three quarters of an hour afterwards, the calf was observed to move; it was cut out, and after a few hours perfectly resuscitated.

In a case of my own, which occurred a few years ago, a poor woman in the latter months of pregnancy, in crossing the street was knocked down and run over by one of the stages; the child was removed from the uterus fifteen minutes after the last respiration of the woman, and completely resuscitated; it died however

in a day or two, but this I believe was from want of judicious management. There are two ways in which the child may be taken away, namely, by introducing the hand into the uterus and bringing it away by the operation of turning; a second, and perhaps better method, because it is quicker, is, laying open the abdomen with a razor, or other instrument at hand, and so removing the child. I hope that it is hardly necessary for me to forewarn you that this operation must not be performed, so long as the woman possesses the least spark of life; I cannot suppose for a moment that any man could lay open the abdomen of the woman in such a case; I cannot for a moment suppose any man would even think of such a thing. If the woman be dead beyond all doubt, then, as surgeons, it is your duty to endeavour to give life to the child. Even in turning, I would not have you use unnecessary violence: in these cases the parts are speedily dilated; for when the woman is completely dead, you can proceed with more rapidity and force than in other cases is allowable.

LECTURE XXVIII.

Retention of the Placenta. When you have retention of the placenta, it is generally the whole of it, together with the membranes, or it may be only part, and more particularly that part to which the chord is attached. It is worth remembrance, that where the placenta has been retained for days, nay, even weeks,

no bad consequences have followed, and if inquiries were made, we should find it of no very uncommon occurrence. But at the same time we know that as long as the placenta is retained, the patient is in danger from various bad symptoms. First. She may have cutting, grinding, sawing pains, in the lower part of the abdomen, and extending down the thighs; but these are rather to be wished for, as they tend to make the uterus contract and expel its contents. If too violent, you may give opium, but the most effectual relief is taking away the placenta when it can be done with gentleness.

Secondly, she is liable to flooding; and I have known this occur a week after the birth of the child: if it be sparing, no active treatment is required; if in larger quantity, then have recourse to the treatment recommended in flooding cases; but the most efficient remedy is the abstraction of the placenta: so that should the bleeding seem disposed to return, bring it away if you possibly can without danger. Thirdly, the patient is liable to offensive discharge from the uterus, but this does not follow every case of retention of the placenta: I conceive it to be from the access of air, the parts being flaccid and open; or perhaps from the non-vitality of the placenta, it being in a great measure detached. If possible remove the placenta; if you cannot do this, you may use as an injection a weak solution of the chlorate of soda, to be thrown tepid into the uterine cavity two or three times a day, by means of a long syringe. This discharge in some cases causes a great deal of constitutional irritation: you have fever, flushed face, with a pulse from 130 to 140 in a minute,—the tongue at first white, but afterwards becomes brown, attended with sickness, purging, and cold clammy sweats;

now and then the patient may sink from this typhoid state. Sometimes these symptoms do not appear at all: I suspect they are caused by the absorption of the offensive discharge. I imagined at one time this offensive discharge was caused from violent efforts having been made to extract the placenta; but I have since found it occur where no force was used. When the placenta is retained in the cavity of the uterus, and the ordinary means for extracting it having failed, or the chord has been torn, and that part of the body of the placenta lying in the vagina has also given way, it becomes necessary to carry the hand into the uterus and bring it away: this can only be done in the latter months, or at the end of gestation. In the early months another method must be employed, that is, to pass the hand into the vagina, and two fingers upward into the uterine cavity, and in this way get hold of, and extract the placenta. In the latter months introduce your hand into the uterus, and spread your fingers over as much of the placenta as you can, then draw it together, and in that way extract it. If this mode be not sufficient to destroy the cohesion, you may with your fingers peel off the placenta from the sides of the uterus, taking care not to injure its inner membrane. Sometimes, mere pressure externally, and grasping the uterus through the abdominal coverings will cause it to contract, and expel the placenta. Besides these manual efforts, there are other modes of expelling the placenta; stimulating clysters, as ℥i of the sulphate of magnesia dissolved in ℥vii of the infusion of senna, thrown into the rectum, will, in exciting this gut, bring on contraction of the uterus; also, cold applied to the abdomen, retching, sneezing, coughing, and voluntary bearing down, may also bring on contraction of the womb.

The *secale cornutum* may be given in the form of decoction every twenty minutes, if the placenta be retained from want of uterine pains. Where the placenta is retained, remember you are not to be determined to bring it away, for it may be retained for days without any ill effect ; it is, however, highly desirable to do so when it can be done without violence, for the patient is more or less liable to floodings and other dangerous symptoms. Sometimes the placenta goes away we know not how, more particularly in the early months ; it may be absorbed, or perhaps it is dissolved, and comes away in the discharge. If the patient have offensive discharge from retained placenta, use palliating means, and examine frequently ; for although you cannot remove the placenta at one time, you may at another.

Errors to be avoided :—Using too much force—tearing the placenta, and leaving a part behind in the uterus. When you have retention from rupture of the chord, you may give the *secale* as formerly advised ; or pressing on the uterus above the symphysis pubis may cause it to contract, and expel the placenta into the vagina, or at least so large a portion of it that you can secure a firm hold, and so bring it away ; but should you fail in causing the uterus to contract, you must carry your hand into its cavity, get a good hold of the placenta, and draw gently down, at the same time pressing on the uterus externally with the other hand. Sometimes the placenta is retained from the pain, swelling, and inflammation of the softer parts, as in laborious labours, or after the use of instruments ; here you must foment the parts assiduously ; take away blood from the arm, say twelve or fourteen ounces ; give opium in a somewhat large quantity,—forty, sixty, or even seventy drops, not minims, may

be given for a dose, and after a time you will find that you can bring away the placenta without difficulty. Sometimes the placenta is retained from the irregular contraction of the os uteri. In general, after the birth of the child the uterus contracts first at its fundus, and there the placenta becomes detached first; and as the contraction of the womb becomes nearer the mouth, the placenta is pushed lower and lower; and when the os uteri contracts, it is pushed completely out of the uterus into the vagina. But in certain women it occasionally happens that the os uteri contracts and encloses the placenta, so that in passing up the hand you feel the closed uterus, but no portion of the placenta whatever. It is said the uterus may be contracted in the middle, forming what is called the hour-glass contraction; but it must be of very rare occurrence; and would require the same treatment as in contraction at the mouth. You must proceed to overcome the difficulty by carrying two or more fingers into the os uteri, and then, expanding them, you gradually and gently dilate it, so as to enable you to get hold of the placenta and bring it away. Sometimes the contractions are stronger, the os uteri closing as fast as you dilate it: beware of using over-force—cease—take away blood from the arm to the extent of sixteen or twenty ounces—give a full dose of opium, say fifty or sixty drops of the tincture, or a proportionate quantity of Battley's anodyne; foment the parts, and in half or three-quarters of an hour you will find the os uteri readily give way, and the placenta is extracted without any difficulty. Emetics have been advised, but I think you will find bleeding and opium the most useful remedies. In some women who may have had three or four children, you find, from idiosyncrasy, the placenta retained

after each : in these cases do not hurry the birth of the child—allow the natural efforts to expel the body, as well as the head ; for by so doing, you allow the uterus to contract more gradually, and consequently you are less likely to have the placenta retained. If the placenta be retained from general contraction of the uterus, wait, for it may be merely temporary ; should it continue, proceed as in contraction of the mouth. If, from inertness, the uterus does not contract and push away the placenta, wait—give time—if it be not contracted in half an hour, it may be in an hour ; and if you draw down before contraction takes place, ten to one but you invert the uterus. After having waited for some time, say an hour, or longer, you may give the ergot of rye, apply pressure above the symphysis pubis, and when the uterus is contracted, bring away the placenta, and examine it, that you may not leave any portion of it, or the membranes, behind in the uterus ; examine also that the uterus be not inverted.

Retention of the placenta from schirrus :—this is generally from mutual inflammation of the uterus and placenta, causing adhesion ; if the inflammation begins in the early months, these adhesions may be very strong. When this disease exists, (for it is very rare) it may be made out by introducing the hand into the uterus, when you find the placenta hard, firm, and semi-cartilaginous ; on questioning the patient she tells you she has had pain and uneasiness in the part during the early, or the whole period of gestation. We must endeavour, by tearing through the adhesion, to bring away the placenta entire, either by grasping it with the hand spread out, as before directed, or peeling it from the inner surface of the uterus. If you fail in this, then tear it to pieces, and bring away all

the loose parts you can ; you may then attempt the schirrus part. If this cannot be brought away, you may leave it in the uterine cavity, and it is either dissolved and comes away in the discharge, or else is absorbed, the woman perhaps again bearing children. In these cases there is one error to be avoided, namely, using too much force, and injuring the inner surface of the uterus. The placenta may be retained merely from want of skill : here you must not leave your patient (perhaps you may have only attended two or three cases) or send for further assistance, fancying it a case of difficulty, at least if you have no alarming symptoms ; use a little activity, but no force. If you fail to get away the placenta, keep the case for four hours without flooding comes on ; and by the end of that time you will find, that although you could not bring it away at the end of the first hour, you can easily do so on or before the fourth.

LECTURE XXIX.

Convulsions may come on either during delivery, or during the period of gestation, known by the involuntary contraction of the muscles, turgidity of the vessels, loss of sight or speech, and sometimes involuntary loss of power in the muscles, occasionally very much resembling trismus ; the tongue is very often bitten, so that you have a flow of blood mixed with saliva ; on the whole, the disease produces a most frightful appearance. You must guard the tongue from the danger of being bitten, by introducing a piece of cork between the teeth covered

with cloth. These convulsions are not generally of long duration, say from one minute to three or more : after they cease, the patient in general seems perfectly well and quite at ease, unless she has received some injury from the previous convulsion, as bruising the limbs or injuring the tongue. Sometimes, however, the woman lies perfectly insensible between the fits, or perhaps she cannot see, or she has paralysis of some part of the body. In those cases where the patient is lying in a state of insensibility, although highly dangerous, yet it does not follow that she will die. Convulsions after delivery are highly dangerous, as they are often caused by extravasation of blood on the brain. You may have convulsions come on during delivery, and occur regularly with the pains : in this case, you must examine frequently. If you find the child is making rapid progress, do not interfere. Should the descent of the child be slow, then I conceive you to be justified in hastening the delivery by the use of the lever or the forceps, provided the softer parts are thoroughly relaxed. Again, you occasionally have it occurring in the middle or latter months of pregnancy, delivery often occurring spontaneously, and the woman gets well : in this case, you must carefully watch the patient and examine frequently, for premature parturition often occurs in these cases—occasionally, however, not : more particularly watch your patient. If she be insensible from these convulsions, or she has had the disease before, for the child may be born and be suffocated in the bed, the woman being totally unconscious of any thing. Examine frequently, and caution the nurse or attendants to watch her most vigilantly, or you will have the child born, and the patient perhaps dead. A lady in the latter months of pregnancy was attacked with convulsions ; the friends of the patient

sent for a female midwife; she came, made her examination, said she could do nothing at present, and went away. In the morning she was again sent for, but when she arrived the lady was dead, and the child born and lying between the thighs.

Your treatment in these cases must consist in taking away blood in large quantities; say to the amount of thirty, forty, fifty, or even sixty ounces; formerly it was the practice to bleed more sparingly; but it was observed, that when by accident the bandage slipped or became loose by any means, so that a second bleeding occurred, the patients in general got perfectly well. The large quantities I have mentioned may be taken in a few hours, should the symptoms not abate. If the patient be plethoric, take away five-and-thirty or forty ounces of blood from the arm at once; and repeat it, should the attack again come on. *Leeches and cupping* are not admissible in these cases, but opening the external jugular will often be found of great service. In bleeding from the arm, take away the blood by a very large orifice; and when you have got the quantity you deem sufficient, bind up the arm very carefully, so that if another convulsion comes on she may not be liable to displace it. Bleed early as well as largely, for if you allow the woman to have several fits, it is highly probable that she will have extravasation either of serum or blood on the brain, and fatal apoplexy. Be careful also to clear the *prima via*; always suspect irritation of the bowels. In these cases the infusion of senna with the sulphate of magnesia will answer the purpose very well, provided the patient be sensible. If, however, she be lying in a state of insensibility, you must carefully watch her, and you will be able after a time to give either a dose of calomel or croton oil. *Clysters*

may be administered, more particularly if you have given purgatives three or four hours previously by the mouth. You may use for this purpose gruel and castor oil, or a drachm of the extract of colocynth may be dissolved in a pint of gruel, or you may use soap and gruel. *Emetics* in general are not required, without you can trace the convulsion as arising from some ingesta taken into the stomach: bleed first, and then you may give \mathfrak{z} i of the pulvis ipecacuanha mixed with \mathfrak{z} iss of water divided into three doses, and repeated if necessary. You must also refrigerate the head if you have activity of the system: if you have throbbing of the carotids—if the face seem swelled, flushed, and livid, attended with hot and dry skin, the scalp also hot, draw the blood away from the head by bleeding, purging, and the *refrigerating remedies*, as bladders of ice, cold and evaporating lotions, or pouring cold water over the head. In general, the assiduous application of cold lotions to the head will be found sufficient.

Should you think proper to apply the ice, you may conveniently do this by filling bladders about one-third full with this substance, and then squeeze out the air, so as to make the charged bladder fit the convexity of the head. If you deem this to be necessary, do it yourself, for the nurses cannot be trusted. Avoid freezing the scalp. If the bladder cannot be borne in direct proximity with the head, you may interpose a piece of flannel. Denman relates a case in which the convulsions were only kept away by the patient remaining in the warm bath. Remembering this, when called to a case of convulsion, you must order the copper to be heated, and a bath to be prepared: if you use the bath, let the temperature be about 96 or 97 degrees of Fahrenheit's thermometer; you may

allow the patient to remain in the bath five, ten, fifteen, or twenty minutes, according to the effects produced ; should fainting occur, so much the better.

Emptying the Uterus. Formerly in these cases of convulsions delivery was brought on as soon as possible, the child being brought away by force. What I recommend to you is, first to try the above remedies, which will in general subdue the convulsions ; should they fail, then if you find you can deliver, do so. If the head be low down in the pelvis, you may bring away the child by the forceps. If it yet remain above the brim, you may introduce your hand into the uterus, and bring away the child by the operation of turning. If, however, you find you cannot deliver without using force, don't deliver at all ; if the woman must perish, let her perish by the hand of nature, and not by yours. By watching the patient carefully, and examining frequently, you will generally be able to deliver, for often sudden relaxation of the parts occurs ; and although you could not deliver without danger at ten, you find no difficulty at two.

Other remedies besides those I have mentioned have been recommended ; camphor and opium is recommended by Dr. Hamilton. Opium in small doses excites the patient, and makes her worse, but in larger doses relieves, more particularly if combined with some diaphoretic, as ipecacuanha, or the tartar emetic. Some have recommended injections of assafoetida ; if you use them, one drachm of the gum resin to a pint of tepid water will be found sufficient. Sinapisms to the feet have also been recommended ; these are useful when the patient is lying in a state of insensibility. Keeping the mouth forced open by means of a wedge, or dashing cold water on the face, will occasionally prevent the fit coming on. It is highly

desirable to prevent these convulsions from coming on at all. If you expect a fit, take away blood from the arm, give purgatives, take away blood by cupping from the nape of the neck, put the patient into the bath, and also try the antispasmodics previously mentioned.

The appearances on dissection. Formerly many died of this disease, but now not near so many. The appearances on dissection are—livid spots all over the body; the cavities of the heart are completely empty; blood is found extravasated on the brain occasionally, but more commonly it is an effusion of serum, either in the theca, base of the brain, or the ventricles; the vessels of the brain and membranes are very turgid; on cutting the hemispheres, the centrum ovale presents a great number of streaks and spots of blood. These convulsions may occur from irritation of the bowels, from ingesta taken into the stomach, but most common from a determination of blood to the head, similar to the convulsions of children, and in those where the fontanels are wide you may feel the brain pulsate more strongly than at the wrist.

Extra Uterine Pregnancy. In general, when women conceive, the ovum, as it ought to do, takes place in the uterine cavity; but it is occasionally formed in the peritoneal sac, in the cavity of the ovary, in the fallopian tube, or in that part of the fallopian tube which is placed in the uterus. When in the peritoneal sac it is called ventral pregnancy; but this is very rare, and perhaps generally to be referred to rupture of the ovary or fallopian tube, the foetus being formed there first, and afterwards escaping into the peritoneal cavity. If the foetus be formed in the ovary, it is called ovarian; when in the fallopian tube, tubular; when in the uterine part of the fallopian tube, uterine

tubular. The uterus generally enlarges, and forms a membrane like the *membrana decidua*. These different varieties of extra uterine gestation may terminate, in the early months, from internal hemorrhage, the foetus bursting through the parts and escaping into the peritoneal sac; or it may terminate by causing inflammation, or from abscess. These abscesses open variously, sometimes into the vagina, sometimes the rectum, sometimes the abdominal parieties, or occasionally in the three parts at one time. The softer parts of the foetus are dissolved and form a sanious discharge, or are altogether absorbed, and the skeleton is discharged by the various openings. This termination of the case causes great disturbance of the constitution, the woman never regaining her health until all the parts are discharged. Lastly, the child may be converted into an inert mass—it may become fatty or cartilaginous, causing no particular disturbance, and the woman may live for years, or even bear children.

LECTURE XXX.

On Extra Uterine Gestation. The uterus becomes enlarged, its sides are thicker, and its cavity larger. If the patient live until the fifth month, a membrane forms in the cavity of the uterus similar to this decidua; but if the woman dies before that time, this membrane is not formed, or if there be any appearance of it, it is merely a vestige. The organization of the foetus is as perfect as if it had been formed in the uterine cavity; it is surrounded by two membranes similar to the chorion and amnion, but there is no decidua.

The placenta varies in form; it may be massy and thick like a natural placenta, or it may be a thin membranaceous vascular mass, like that of the mare: the foetus seems to be well nourished with either of these kinds.

The Diagnostics of this disease in the early months are not very intelligible. If she have the symptoms of pregnancy—if she complain of anomalous pains in the false pelvis—if she have tenderness, spasm in the abdomen—if she be seized with a fit of collapse and die suddenly, as from the bursting of a blood vessel, you will very likely find this to be a case of tubal pregnancy on post mortem examination. If the foetus be in the ovary the woman may go on to the full term of gestation; at this period she is seized with pains, which she believes to be labour-pains. On examination per vaginam, you feel, instead of the membranes and the presenting part of the child, the os uteri open, allowing the passage of one or two fingers into the uterine cavity, but which contains nothing but a membrane. Taking care that the bladder be empty, you examine externally just above the os pubes—you feel the uterus as large as the foetal head, and beyond this another tumour still larger; this, with the woman having all the symptoms of labour, and blood, together with a membrane being discharged from the uterus, combined with the other symptoms, forms a strong proof of ovarian pregnancy. Sometimes these symptoms pass away; you have then what is called the chronic state; and it may be two or three years from the first attack before you are called to the patient. Suspecting the case, you must endeavour to obtain a proper knowledge respecting it. If the patient has previously had all the symptoms before enumerated, and more especially

if you can see the practitioner who was called to the case on its commencement, you may make it out pretty clearly.

Treatment :—It has been proposed to make an opening through the abdominal coverings, but this is too rough and dangerous a mode, the circumstances of the case not warranting it. Where inflammation has occurred and the ovary has been glued to the abdominal coverings, and ulcerated or formed an abscess, and on opening it you find it to contain bones, hair, &c., you may enlarge the wound, and introduce your dressing forceps from time to time to remove the bones as they become loose, for the opening will not heal until all the bones have been removed. Or the ovary may be glued to the intestines by inflammatory action, and ulcerate, the various parts of the child being discharged by the rectum. Or, as previously mentioned, you may have the child converted into an inert mass, and cause no inconvenience except from its weight.

On Monsters. These are generally divided into four varieties, namely, the deficient—the redundant—the misshapen—and the mixed. In some, the cerebrum, cerebellum, the sides and upper bones of the head are wanting ; in others, the lower extremities are wanting ; in others, merely the lower extremities are formed ; in others, the legs may be united, and form but one foot ; in others, a conical substance is formed, instead of the lower extremities. Or, you may have twins, united at the breasts, like the Siamese Youths ; or, instead of the breasts, you may have them united together back to back ; or you may have all the parts of two bodies, and but one head ; together with various others, specimens of which are placed before you. These cases require the same general rules as laid down in

other cases. You first try the natural efforts—if they fail, then the lever or the forceps; should they fail (which in these sort of cases, more particularly where the cranial bones are wanting, they are apt to), then have recourse to the perforator; and in these sort of cases you do not feel the same reluctance in the use of this instrument which you do in others.

Tumours obstructing the pelvis. These may be divided into two kinds; the recto-vaginal; the other class comprising all the rest. If you have stone in the bladder, and it impede the labour, endeavour to push it above the brim; if you do not succeed in this, you leave the case to the natural efforts; but if the parts seem disposed to slough from the pressure, I think it would be right to take a scalpel and cut into the bladder from the back part of the vagina, and so extract the stone—and afterwards by keeping a catheter constantly in the bladder you might get the divided surfaces to unite. Tumours occasionally form on the sacro-sciatic ligaments. A case is related by Dr. Drew, in which he excised a tumour of this kind obstructing the delivery, and with success. Sometimes exostosis forms on the promontory of the sacrum, impeding parturition; if very large, the cæsarean operation may be necessary; if but small, then employ the means recommended in narrow pelves.

The recto-vaginal tumours are generally formed from enlarged ovaria, they being either dropsical or schirrous; in very rare cases, it may be from enlarged glands—or occasionally you have the ovaria and an intestine descending with it. On examining a case of this kind, you find yourself very much puzzled by finding the vagina blocked up—perhaps you cannot find the os uteri: they all of them are dangerous cases. If you can push the tumour above the brim, do so; if not,

trust to the natural efforts, for sometimes the head will make way under the action of the uterus, either by squeezing the tumour above the brim, or else bursting it : should this fail, then you must lay open the tumour, if you can do so. If from dropsy of the ovary, puncturing it with a trocar and canula will be sufficient : should it contain a gelatinous fluid, lay it open with a scalpel, and press out the contents ; or should the ovary be schirrus, lay open the back part of the vagina and extirpate it ; always remember, however, that a piece of intestine may descend with the tumour, of which you ought to be very careful. Your puncture or incision ought to be made in the bottom part of the tumour, for there it may be done with more safety. Forceps in these cases cannot be had recourse to, for you cannot draw down the child without using unwarrantable violence. It is not often necessary to open the head, for although by that means you reduce its bulk, yet the body of the child is in general too large to pass the difficulty. Turning must not be had recourse to in these cases, for when this practice has been adopted it has produced the worst effects. The truth is, do what you will, these cases are always highly dangerous.

On Puerperal Fever. This disease may come on the same day with the delivery ; or it may be as late as the seventh : most commonly it occurs about the third day. The force of its attack is various in different individuals. I have known it fatal in twenty-four hours after the first appearance of the symptoms. It is always more dangerous when it occurs soon after parturition—the later the more tractable, even if the severity of symptoms be the same. Chills and heats are the first symptoms of this disease, but these vary much in degree. Sometimes the chills are hardly percep-

tible ; in others, you have complete rigours, putting on the appearance of the cold stage in ague. Sometimes the chill is compared to cold water running down the back. A severe rigour is not in itself an unfavourable symptom, for we generally find the disease to be more malignant when preceded only by slight chills. These chills are succeeded by pain and tenderness in the abdomen, varying very much in intensity in different individuals. Some are so exceedingly tender as not to bear even the weight of the bed-clothes—others again can bear considerable pressure, and it requires a cough or something of the kind to produce pain. But the danger of the patient does not seem to depend on the degree of pain ; rather the contrary. This pain always begins between the navel and pubes, sometimes confined to one spot, in other cases spreading over the whole abdomen—far more dangerous and less likely to yield to your remedies than when circumscribed. The after-pains in these cases are very severe ; if you have a woman complain of little or no pain on the second day, and you find her on the third dreadfully distressed by them, always suspect abdominal inflammation. If this inflammation begins earlier than this, then you have very little hope : even on the third day it is always highly dangerous. On examining the pulse, you may find it 130, 140, 150, 160, or 170 in the minute, and the higher the pulse the more dangerous the patient, even supposing the other symptoms have abated. These then are the plain characteristics of this disease :—some forms are attended with much head-ache. The duration is various ; three, four, or five days most commonly closes the disease ; it may end in resolution—the best and most favourable form ; gradually the pain and tenderness of the abdomen diminish, the pulse from

being 140 or 160 in a minute, is now 100, or even less, and the woman speedily and perfectly recovers. Or secondly, the disease may end by exhaustion; the strength gives way, the tongue is covered with a brown fur, the extremities become cool, the pain ceases, the mind is placid and composed, and, to an inexperienced practitioner, she seems much better. On being questioned, she says she is very well—she has nothing to complain of; but let not this deceive you, for it is the deceitful calm of approaching dissolution. On examining the pulse, which must ever be your guide (for it is always to be depended on), you find it 140, 150, 160, or perhaps higher than this in the minute, which, were she really better, would be greatly diminished, frequently perhaps as low as 100 in a minute, or even below this. Thirdly, this disease may end in chronic inflammation;—you may have vomitings, sweatings, pain, and tenderness of the whole surface of the abdomen. The pulse varies, occasionally lower than at other times, the woman keeps rallying and sinking, getting gradually worse, and in a few days she dies: occasionally cases of this kind, however, recover. On examining the abdomen, the appearances on dissection are, effusion of lymph or blood into the peritoneal cavity, more commonly lymph; thickening of the peritoneum, and adhesion of the intestines one to another. Puerperal fever differs from inflammation of the bowels, in being easily acted on by purgatives, or even attended with purging; while inflammation of the bowels is always attended with the most obstinate costiveness. In puerperal fever the lochia often continues to flow, but is sometimes more aqueous; the milk in general is dried up, but this may be partly from the remedies used to cure the disease. Vomiting is also common.

LECTURE XXXI.

On the Treatment of Puerperal Fever. In the more malignant forms of this disease we are often unsuccessful whatever treatment we adopt. In the malignant forms, *bark* and various other *tonics* have been recommended in large doses, by Dr. Clarke, but not much to be depended on, for even in his hands the bark was not attended with any very encouraging success. *Aromatics* also have been tried, but with little good effect; they may be given, however, if you think proper. *Emetics* have been highly spoken of. It was noticed by a French physician, M. Doulcet, that if the patients labouring under puerperal fever in the Hotel Dieu vomited, they often recovered. Led by this, he directed emetics to be distributed amongst the nurses, to be given by them to the patients as soon as the symptoms of fever manifested themselves. He spoke highly of this plan of treatment; but it is not much to be trusted to, as it partly depends on the nurses, who might have given it in cases where no puerperal fever existed. For myself, I have no confidence in curing the disease with this remedy. Should you think proper to try emetics, they must be given within the first two hours after the chills. Dr. Denman at one time recommended nauseating doses of *tartar emetic*; but in the bad cases of puerperal fever this practice will be found totally inadequate to the cure of the disease; indeed, Denman himself seemed to have discovered this, for he afterwards recommended bleeding. *The oil of turpentine* has been highly recommended by Dr. Brenan and others. I have tried it in four cases, but which by no means verify

the high encomiums bestowed upon it. In the first case in which I tried it, bleeding had before been tried. $\mathfrak{z}\text{ii}$ of the oil of turpentine were given in divided doses in the course of sixteen or eighteen hours, without any effect, except gently moving the bowels. The patient died. In the second case, the disease was more severe : here the turpentine was given even more largely than recommended by its advocates ; but this patient also died. In the third, a sporadic case, in which bleeding had been tried without benefit, it certainly did seem to do good, and the woman got well. For myself, I think this remedy by no means a certain cure ; if the case be desperate, so that you can place no reliance on other remedies, you may give it largely and alone.

Mercurial preparations have also been recommended. It has been said if you could get the mouth sore the patient would be safe. I am sorry to say that a patient to whom I gave this remedy died in the usual manner, although the system was brought under its influence : it is, however, worth trial. The mouth is not easily affected, and the disease has often run its course before your remedy has made any impression. I have known two scruples of the submuriate of mercury to be given combined with opium, to hinder it from running off by the bowels—a large quantity of the strong mercurial ointment rubbed on the inside of the thighs ; the patient also breathed the fumes of cinabar, without affecting the mouth. *Digitalis* has been recommended : I have tried it without any good effect. In one case I pushed it so far, that I thought the patient would die from the effect it produced, it having accumulated in the system, and produced its effects very sudden : however, after all, the puerperal fever ran its course, and the woman died. *Blisters*

are also recommended: these ought not to be applied before the second day, when the pain and tenderness become more local. *Ice* has also been recommended: and I have tried it, but without success. Of all the remedies recommended for this disease, bleeding is the best; but to be of service, you ought to begin your bleeding as early as possible. If within the first six hours, you are very likely to cure the patient. If within the first twelve hours, you have hope; if twenty-four have elapsed before you take away blood, there is no chance whatever. The blood must be drawn from a large orifice, so as to ensure a full and continued stream, and at the first bleeding you may take away twenty-five or thirty ounces, according to the state of the patient. When you have taken this quantity, you may suddenly raise the woman into the upright position, so as to cause fainting. Hysterical women sometimes faint when you have taken away only four or five ounces. Should this be the case, you must wait till they rally, and then take away the remaining quantity. In four or six hours you may judge if it be proper to bleed again. For this purpose you make your observation on the pulse; if only 116 or 120 in the minute, don't bleed again; but should you have the pulse running to 130 in the minute, or higher than this, then you must repeat the bleeding. You must also observe the abdomen. This you can readily do, more particularly if you have not applied a blister. If you find it without any tenderness, it is another reason for your not again bleeding; but, on the contrary, if you find the abdomen is exceedingly tender, and this combined with a rising pulse, then you must again have recourse to depletion: you should take the blood in separate cups and examine it. If you find it cupped and buffed,

you know there is inflammation present ; but, on the other hand, you must not infer that no inflammation is present because the blood is neither cupped nor buffed, for it is well known that this appearance is not present in the blood taken the first six hours. You must be very cautious should you wish to bleed a third time. If the patient is of ordinary strength, and you have taken away twenty or thirty ounces of blood the first time, and sixteen or eighteen the second, you run no risk from this ; yet you have reduced the system a good deal, and the woman may sink from the third bleeding : also, if the first two bleedings have not succeeded in stopping this disease, we have very little to hope from a third. It is better also to have the opinion of another practitioner on the case, before you proceed to bleed again : also observe, if collapse has taken place—if the extremities have become cold—if the pulse fail—if inflation of the abdomen has come on, you need not bleed, it is of no use. If there be no collapse, if the pulse is as low as 115 in the minute, you need not bleed, for the woman will get better without it. If you have no tenderness of the abdomen, do not bleed ; but if you have the pulse at 150 in the minute, then bleed : the quantity taken away may be from twelve to fourteen ounces. If you deem it unsafe to bleed from the arm, you may apply leeches ; but let me guard you against applying too many, for the woman may sink from the loss of blood : twelve or fourteen will be quite sufficient. It is of the utmost importance to bleed early, and not to let more than six or eight hours elapse between the first and second bleeding : forty, fifty, sixty, nay, even seventy ounces of blood have been taken away during the first twenty-four hours. Trust chiefly to bleeding : you may also give two scruples of the submuriate of mer-

cury, combined with eight grains of the extract of opium (to prevent it running off by the bowels), in the twenty-four hours. As auxiliaries, you may give an emetic, but it must be given early, or it is of no use. You may also try the oil of turpentine, more particularly if no good results from your bleedings. Blisters may also be applied to the abdomen on the second day, when the tenderness becomes more local.

There are three varieties of puerperal fever—the malignant, the milder, and the sporadic. An epidemic is very often malignant—the rise of the pulse; inflation of the abdomen—pain and tenderness diffused over the whole surface of the abdomen—sudden sinking of the strength, and by other cases occurring in the district, are the symptoms marking the malignant kind; and in this form of the disease, do what you will, the woman dies. Don't bleed much: give emetics, calomel and opium, the oil of turpentine, or tonics; perhaps the warm bath, or hot blankets might be useful in the chill. In the milder form, where the powers of the system do not give way so soon, you must be active: bleed, give the calomel and opium, and apply blisters. It is of the utmost importance that you should bleed early; if you lose the first twelve hours, then bleeding is of little or no use. As the epidemic increases, it may perhaps become milder and more manageable; so that those who see it in the milder cases only, have no idea of its formidable character. I have known men boast of always curing puerperal fevers; and yet when it has really occurred they have lost five or six cases in succession. The milder form is known by the less frequent pulse—perhaps not more than 130 or 140 in the minute, by the tenderness of the abdomen being more circumscribed, although perhaps more severe than in the other case,

by the strength not giving way. She may be two or three days without sinking, and then get better; by the character of the epidemic at the time; and lastly, by the tympanites being less, or not occurring at all. The third variety is the sporadic, occurring when no epidemic is stirring at the time; these cases are always more manageable, although the symptoms may be very severe. If you meet with it in the severer kind, use the treatment before mentioned: if milder, you may apply thirty or forty leeches to the abdomen; give diaphoretic medicines, apply blisters, and keep the woman on a very low diet; these means in general will be found sufficient. The great predisposing cause of this disease is delivery; but according to Denman, it has also occurred in women with unperforated hymen, where the collected discharge has been let out, and the uterus suffered to contract at the time when puerperal fever was prevalent. No doubt a second cause is epidemic; but whether this depends on a certain state of the atmosphere, or from moist vapour, we know not; but it is so, just the same as small-pox, measles, scarlet fever, &c. I don't say it always comes from infection; but I would rather a friend or relation of mine was delivered in a stable, without any assistance, than she should be attended by a practitioner who had just attended a puerperal patient. I don't say it is always contagious, but when it exists in a district it becomes so. *Diagnosis* generally unfavourable; in the malignant forms, always so. It is a good sign if the first bleeding takes effect; and you had better avoid giving an opinion until you have seen the effects of your bleeding. Tympanites of the abdomen is a bad omen; the rise of the pulse and sinking of the strength, also. I must again beg of you to remember

the deceitful case I mentioned in the last lecture, that you may not be misled by it. In districts where the puerperal fever is raging, you are apt, in your alarm, to mistake other diseases for it. Loaded bladder may produce symptoms very analogous to puerperal fever; hence the propriety of introducing the catheter in all dubious cases, and at the same time applying pressure above the symphysis pubis, that the urine may flow should the bladder be paralytic. Again, in irritation or spasmodic pains of the bowels or uterus, you have occasionally increased rise of pulse, the uterus perhaps becomes hard and painful. This requires the same treatment as the sporadic cases in puerperal fever. As long as the pulse keeps below 120, the patient is not in great danger. Enteritis I before said might be distinguished from puerperal fever, from the great constipation in that disease.

LECTURE XXXII.

On the after-pains. These are caused by the contraction of the uterus, from clots in the uterus, warm drinks, and the sucking of the child. The more children a woman has, in general the more severe are the after-pains. Should you on your visit find your patient complaining greatly of pain, examine the pulse; if only 90 or 100 in the minute, she is merely suffering from after-pains. If puerperal fever prevail in the neighbourhood, you must be very particular

about this. To relieve the pain, you may give her twenty-five drops of the tincture of opium directly, in any convenient vehicle, and leave a similar draught to be taken an hour after the first, should the pains continue unrelieved. There is a second variety of after-pains, differing from the former in being more frequent and severe ; in fact, the woman tells you the pains are worse now than when she was in labour. These pains are generally, I believe, of a spasmodic character : in these cases also be careful to observe the pulse, for it may be the commencement of puerperal fever. If the woman be plethoric, take away sixteen or eighteen ounces of blood from the arm, or apply twenty or thirty leeches to the abdomen ; give opium in large doses ; say forty drops of the tincture, and you may repeat this in an hour if necessary. In the third variety you have inflammatory tenderness and hardness of the uterus ; this is the most dangerous variety of the three, as it is not unlikely to terminate in puerperal fever. *Treatment.*—Take away blood in large quantity, give purgatives, and also opium in large and frequent doses. Leech and foment the abdomen. After delivery there is a discharge from the inner surface of the uterus, where the placenta was attached, called the *lochia* ; it is at first red, and hardens the napkins applied to receive it, and during the first few days it is often mixed with clots : in three or four days it changes colour, becomes greenish, watery, and has an offensive smell ; subsequently it becomes whitish and more transparent ; and in about ten or fourteen days, it ceases altogether, liable, however, to much variation in different women. If the woman should have cough, it may cause the lochia to flow more abundantly ; if it be so abundant as to reduce the patient's strength, you

may employ the treatment formerly recommended in the smaller floodings. A very excellent remedy for the cough is the camphorated tincture of opium, or paregoric elixir, as it is called, given in half drachm doses. If a portion of placenta be retained in the uterus, it may also increase the lochial discharge; known by vomiting, offensive discharge, and severe after-pains, but with greater certainty by internal examination. Should the symptoms be very urgent, your best plan is to remove the offending portion; but if not, leave the uterus to its own efforts, and it will very probably clear itself. Occasionally you find the lochial discharge is altogether stopped, or nearly so. Now this, though often unattended with unfavourable symptoms, is occasionally arising from inflammation of the womb, or the closure of the os uteri by a clot of blood, which prevents the proper flow, and may cause pain and tenderness in the region of the womb. Should inflammation be the cause, it may be known by the chills, by the hardness and tenderness of the womb, by the heat of the skin, and more particularly by the rise of the pulse, often ranging as high as 120 or 130 in the minute, and it must be treated accordingly. In cases of flooding, where the woman has lost a large quantity of blood, the lochia is very often sparing, and ceases altogether in a few days. You should always ask, on your visits, about this discharge; but I don't believe it has much influence on the constitution.

On phlegmasia dolens. This disease is divided into two varieties, namely, the acute and the chronic. First, then, of the *acute*. The disease commences on the second, third, or fourth week—generally the second. It has been said to come on months after delivery, and Mr. Levret says he has known it occur on

weaning the child a year or two after delivery. The patient complains of pain, stiffness and swelling of the front of the pelvis, more particularly on the left side (for this disease generally begins on this side, but why I cannot say). In a few hours perhaps the woman complains of severe pain in the middle of the lower limb—the region of the knee, for example, and this followed sooner or later by swelling, firmness, whiteness, heat, and tenderness on pressure or on motion of the limb. Or the disease may affect the upper part of the thigh, and extend downward, the knee, leg, and foot becoming gradually involved in the swelling, and putting on, at the same time, a glossy and white appearance, attended with heat, pain, tenderness, swelling, and elasticity of the parts. These symptoms which I have enumerated may come on within the first four-and-twenty or eight-and-forty hours: sooner or later, in different cases.

Under the slighter effects of this disease the motion of the limb, independently of that impediment to its movement which results from pain and swelling, is not often much impaired; but in the more severe attacks there is added to this swelling and pain of the limb a kind of paralysis—the woman cannot move her left leg at all, or moves it with great difficulty. On asking why she cannot move it, she tells you it is not from pain, but she seems to have lost all power over it. You have also combined with these outward appearances certain constitutional symptoms—you have shiverings, heat, and dryness of the skin—the tongue is white—the pulse is 130 or more in the minute—the lochia may be suspended, or it may continue to flow in the usual manner; but it is a fact well deserving of notice, that this discharge often becomes very offensive—the urine is turbid—the perspiration often co-

pious, but not beneficial—the patient is weak, and there is often a good deal of nocturnal disturbance. After continuing a longer or shorter time the disease terminates by the gradual subsidence of the inflammation and other symptoms, the limb regaining its natural size; or the inflammation may subside, leaving the limb hard, firm, and greatly enlarged, and the disease degenerates into the chronic form, remaining perhaps in this state several months, perhaps years, in some cases, but in others only a few days; the average term is about a fortnight. When the inflammation yields, topical indurations are sometimes observed in different parts of the limb, not of a glandular nature, nor situated in those parts of the lymphatic system. This disease may end in suppuration or mortification, but not at all common; or the arms may also be affected, or the disease may pass from one limb to another. If you puncture the limb a small quantity of a gelatinous fluid flows.

The local treatment of this disease consists in applying leeches in the first commencement about the abdomen and bend of the thigh; blisters and sinapisms may be applied to the same parts afterwards; the bowels must also be freely acted on. Should the woman be robust, perhaps you might take away blood from the arm in the commencement of the disease, say to the extent of sixteen ounces; otherwise, by taking away blood in this manner we only weaken the powers of the patient. When the disease is fully developed in the leg, the principal means to be employed are—leeches, fomentations, poultices, and evaporating lotions. If the inflammatory action runs high, eight or ten leeches may be applied to the limb once a week: a larger quantity than these are objectionable. Puncturing the limb is useless, without the fluid should be

very watery. The constitutional treatment consists in acting gently on the bowels by means of laxatives, but not in any very great degree, as the movements for this purpose are often very distressing. While the inflammation is high the antiphlogistic regimen must be adopted, diaphoretics may be given, and also the digitalis, should it be deemed necessary. Should the pain be very great, or the restlessness troublesome, opiates may be given with advantage. As the disease advances, and more especially if the woman be of a weak and irritable constitution, a different treatment must be adopted:—give nourishment, mild laxatives, opiates, and as the symptoms subside, the bark and sulphuric acid may be given, or any other of the tonic remedies. This disease is not generally dangerous, but now and then patients sink under it; more especially if the women are much reduced in flesh and strength, and nervous energy, they are liable to sudden dissolution, and that perhaps when not at all expected;—it may be from merely turning in bed, or attempting to sit upright; this causes syncope and death, of which I have seen several instances.

In the chronic form of this disease the limb remains hard, tense, swelled, cold and stiff, and about twice its natural size. In these cases our object is to excite the absorbents to action, and friction may be used for this purpose, either with the hand or with mercurial ointment, the hand of the operator being defended with a glove: after which a well adjusted bandage will be of great service, and it is on this I place my greatest reliance, having found it highly beneficial in several cases. The use of the roller is to excite the action of the absorbents by firm and steady pressure without endangering the interruption of the circulation; it should be about six yards long

and spread over with some mild adhesive plaster, so as to give it a firmer hold ; this you apply as high as the knee, beginning at the foot and ankle ; you then apply a second roller on the thigh, but leave the knee uncovered. Should the pressure of one roller be found insufficient, you may apply a second over the first ; by attention to the careful bandaging of the limb you may often cure the disease in a few weeks. Burns recommends the supertartrate of potash dissolved in water, to be taken in considerable quantity. According to him, this is often attended with obvious advantage. Dissection in these cases of phlegmasia dolens shows but little. Sometimes there is enlargement of the inguinal glands ; in others, according to Dr. Davis, inflammation of the large vessels : in others, inflammation about the vagina and neck of the womb, without any inflammatory affection of the vessels of the thigh ; but the true nature of the disease is still doubtful.

Laceration of the perineum. At the close of delivery women are liable to laceration of the perineum, occasioning, when extensive, great distress to the patient. The perineum, as formerly mentioned, is liable to be torn in different directions. If the rent be small, not exceeding an inch in length, it is of little consequence, but the case becomes more dangerous when the rent extends into the rectum. When the sphincter ani is torn through, the retentive power of the gut is lost, and the anus and genitals form but one common aperture. Or the perineum may be perforated by the child's head, or the child's head may burst through the back part of the vagina into the rectum, and be forced through the orifice of the intestine. The most common case is where the anus and genitals are torn in one. If the rent be small, keeping

the parts clean will be sufficient to heal the wound. If the sphincter ani be torn through, the retentive power of the gut becomes lost, at least for a time; but it is satisfactory to know that after a time the parts harden around the laceration, and except when diarrhœa occurs, retains the fœces. The patient in these cases is very liable to prolapsus uteri. Should the laceration be attended with a large flow of blood, cold, ligature, and pressure will be the most effectual remedies, but I have not yet seen a case requiring them. The torn parts must be kept clean; should they show a disposition to slough, oil of turpentine diluted with olive oil, or the tincture of myrrh, may be applied; but reunion, although it may not occur, should be attempted. Ligatures may occasionally be used for this purpose, but they are apt to excite inflammation and become ulcerated before the adhesion of the parts is completed; adhesive plaster may be used in conjunction with the ligatures, or what is better, the adhesive plaster alone, if it be sufficient to keep the parts in apposition. During your attempt at reunion, the bowels become a point of consideration; some lock them up for a week or ten days after a thorough evacuation, the patient being allowed but one or two eggs for her daily nourishment. Others again give mild aperients to keep the bowels lax, but at the same time avoid causing any griping or other disturbance of the parts. The first plan is perhaps the best. Women sometimes come to you with chronic rents in the perineum a year or two after the accident, anxious to know if any thing can be done for them. If merely prolapsus uteri, it is readily relieved by a pessary. If the parts are attempted to be united, you may torpify the bowels and pare off the callous

edges of the wound, and then by ligature and adhesive plaster bring the cut edges of the wound together, and keep them in apposition. One case thus treated I have known get well, but I am sorry to say it has failed in others. Should the woman be weak and irritable, it is very probable the ligatures will ulcerate, thereby rendering the operation null; be careful therefore of promising too much in these cases, for the probabilities of failure are great.

LECTURE XXXIII.

Women sometimes lose their strength from the large supply of milk they are obliged to furnish for the due nourishment of the child. The woman becomes languid, weak, and feeble, approaching a state of cachexy; she may have night sweats, hectic fever, dimness of sight from weakness of the retina, or she may become hysterical or hypochondriacal; perhaps these complaints are referred to some other cause, and treated accordingly, but as soon as the cause producing the disease is ascertained, the remedy is plain and easy. The child must be gradually weaned; it may be fed in the day time, and allowed the breast only at night, or a wet nurse may suckle the child during the night and the mother during the day. If the health of the mother be only slightly affected, then endeavour to keep up the health by mild and nourishing food; and give porter, which seems to have very good effects: one, two, or even three pints of this beverage may be taken in the

course of twenty-four hours, and that without the head being at all affected. The breasts are occasionally too much distended by milk, more particularly during the first week, or from the death of the child, and various instruments have been invented for their relief.

The common breast glass may be used by the patient herself, or an attendant; it is a kind of glass pipe; the head admits the nipple, and has a rim around it to prevent its hurting the breast; below the head, and at the beginning of the stem is a ball for the reception of the milk; the other end is adapted for the mouth, so that the patient, or more generally the nurse, by applying the mouth to this part and exhausting the air, causes the milk to flow from the breast into the ball. Secondly. *The breast pump* is also used for the same purpose; it is a kind of cupping glass, which can be exhausted by means of an air syringe screwed on its upper end, and by placing a finger on a projection near the bottom of the syringe, can be made to draw out the milk from the breast, and by taking off the finger allows the air to pass again into the glass. The mouth of the glass should be large enough to admit the thumb with ease, and the rim surrounding the aperture must be large, round, and smooth, so as not to injure the breast. *A Florence flask*, should the pipe or pump not be at hand, will be found to answer very well, first rendering the mouth smooth and round by covering it with sealing wax; it must then be filled with boiling water; this you pour out again and apply it over the nipple; the vapour of the boiling water causes a vacuum like that in the air pump. *A decanter*, care being taken in filling it, will be found to answer very well: without care be used, as

the glass is very thick, they are apt to crack from the sudden expansion caused by the heated water. If a *puppy* can be procured, it will answer the purpose very effectually, these animals being very fond of the milk.

Women are liable to two kinds of *inflammation of the breasts*, namely the *acute* and *chronic*.—The acute generally occurs three or four days after delivery ; you have great heat and tenderness of the part, attended with fever, and if not instantly checked, soon runs on to suppuration. You must apply leeches to the part, evaporating lotions, give brisk purgatives ; if the woman be robust, take away blood from the arm, say to the extent of eighteen or twenty ounces : this, although it may not prevent the suppuration, yet it may lessen the quantity of pus, but if the woman be of a delicate and irritable constitution, you must trust to leeches, purgatives, lotions, and fomentations ; or you may boil a wooden dish as you would an egg, and then wipe it dry, wrap it in flannel and apply it to the breast ; this is called by nurses *bowling the breast*. *Digitalis* might also be given. *Opium* must be given at night should the pain demand it. If the inflammation proceed to suppuration, you must change your plan of treatment ; this is known by the throbbing in the part, by the diminution of pain and swelling. Fomentations and poultices must now be used, and as soon as the matter forms it must be evacuated by the lancet. The matter smells very much at first ; after a short time you have milk mixed with it, and at last perhaps the discharge is entirely milk. Poultices may be applied after the discharge of the matter, and afterwards any simple dressing. The other breast may become similarly affected before the former one gets well. The matter may form in

two or three days, or it may be longer. In the chronic inflammation the breast is very hard; the pain at first very severe, remits, again returns; finally, matter is formed, which must be evacuated, and the breast will then get well. Camphorated oil is the best remedy that you can employ for this hardness of the breast. Carcinoma rarely follows the hardness left by these inflammations. To avoid these inflammations, always apply the child to the breast early, and if the breasts become too much distended with milk, you must draw them either by means of the breast glass or pump.

Milk Fever.—The secretion of milk is not perfect until forty-eight hours after the birth of the child; at this time you have considerable excitement of the system, which may last four or five hours, but generally ceases if the child be applied and the breasts emptied. To obviate this febrile excitement, I would advise that the child be applied to the breasts as early as possible, not waiting for the flow of the milk. The woman should also be purged on the third day. If you have much heat and dryness of skin, with a quick and hard pulse, oppression about the chest, attended with anxiety, you may take blood from the arm, purge freely, and empty the breasts by either of the instruments before mentioned. Diaphoretic medicines may be given, and the patient placed on the antiphlogistic plan of treatment. The nipples frequently crack and produce great distress to the mother when suckling the child; bathing the nipples frequently with a lotion of alum, or borax in rose water, will be found to afford very effectual relief, or the nipple may be protected by the use of the teat and shield.

When, from narrow pelvis, or rigidity of the softer parts, the child's head becomes very much compressed,

the scalp often swells exceedingly, and the cranial bones become displaced. If the scalp be merely swelled, it soon subsides, either under the application of cold lotions, or perhaps without any remedy whatever. The displaced bones require no treatment, for after a short time they regain their proper position of themselves. If the scalp is inflamed as well as swelled, it may run on sometimes to the formation of matter. Your treatment will consist of fomentations and poultices; and when the matter points, it must be evacuated by the lancet.

In labours where the face is born first, the neck of the child is sometimes *strained* from the strong uterine efforts, the face is swelled and livid, and on the whole presents a very frightful appearance; this, however, soon goes off—in a fortnight or less the face has regained its natural appearance. The head may be supported by means of tapes fastened to the cap and other parts of the dress, or the nurse may support the head with her hands; the muscles soon recover their proper tone.

The nerves in the auxillæ, or bend of the thigh, may be injured, but this seldom occurs: when so, it is from force and violence, which, if you follow the rules of this school, you will never employ. If the injury be extreme, you will have a corresponding loss of power in the limb; if only slight, it will soon get well. Kosciusko, the hero of Poland, who fought the last battle for the independence of his country, was in that battle wounded in the thigh by the bayonet of a Russian soldier, which injured the nerve. When set at liberty by Paul, Emperor of Russia, he came over to this country, and was seen by many of our most eminent surgeons. He had considerable want of power in the limb, and used to drag it after him when walking.

He left this country without relief, and went over to America, and while there recovered the complete power of the limb. If, then, nerves injured so extensively admit of reparation in the adult, we may fully expect it to take place in the infant, where the growth is so very rapid. The nerves of the auxillæ are most likely to be injured by pulling down the arm in shoulder presentations, and those of the thigh in breech cases, as where you use the blunt hook with unwarrantable violence. The arm or thigh may be *fractured* from the same causes. The parts soon get well, if you keep them in careful apposition two or three weeks.

Tumours are occasionally formed on either of the parietal bones, resembling a bursa mucosa; they are filled with a glairy fluid. In these cases the external table of the bone is wanting, and on examination you feel a circumscribed cavity, which gives to the finger the feel as if there was a communication with the brain; but this never occurs in these kind of tumours. *Treatment*—All you can do is to gain time, and the parts will get well of themselves. Lotions of alum, lead, or zinc may be applied, by means of cloths, to the tumour; or poultices composed of port-wine lees and bread-crumbs may be used for the same purpose.

Closure of the genitals. This is often from mere adhesion of the nymphæ: on the first examination it looks like malformation of the parts—you observe no traces of the nymphæ. Should you suspect this to be a mere closure, take a probe and introduce it between the vagina and nymphæ, and then, by pressing the probe forward, the nymphæ resume their proper appearance; or sometimes you may succeed in destroying the adhesion by merely separating the thighs widely. After having destroyed the cohesion by either of these means, your only remaining object

will be to prevent their re-union. But, beside these cases, female children are occasionally brought to you with real *malformation of the genitals*. If the child be very young, don't operate ; delay till the age of puberty, for the parts are not much wanted till then, and the child may die long before that time, rendering an operation totally unnecessary : but the best reason is, that your waiting does no harm. When the patient is about seventeen or eighteen years of age, then the operation may be performed, this being the best time ; before you operate you must decide whether the operation is likely to be attended with any benefit. In some of these cases neither uterus nor ovaria exist, consequently any operation would be useless. If the ovaria be wanting, you have no widening of the hips, no fulness of the breasts, nor any change in the genitals. The flow of the catamenia is a sure indication of the existence of the womb—sometimes the catamenia accumulates, and by delaying the operation till this occurs, you have a good guide in your operation from the tumour this forms. If you find the ovaria, uterus, and upper part of the vagina exist, the operation is very simple ; it merely consists in cutting into the vagina from before, and keeping the opening permanent by means of tents. On the contrary, should the ovaria and uterus be wanting, it is of no use whatever to operate.

Children are sometimes *tongue-tied*, but not near so often as the nurses would have you believe ; they seem to have a perfect horror that the child should not be able to speak at the proper time, and if the mother should fancy the child sucks with difficulty, or clacks in sucking, it is instantly set down as tongue-tied : should it really be so, you find the tongue tied down in the mouth by a membrane ex-

tending to its tip, and the child is not able to raise the tip of the tongue to the roof of the mouth, nor protrude it to the outer margins of the lips. When the child screams from the nurse holding it fast (for even children at this age don't like restraint), you take a pair of blunt pointed scissors used for this express purpose, and snip the membrane, say to the extent of one-eighth of an inch, more or less, according to the length of the membrane, directing the points of the scissors downward, that you may avoid the ranine artery. Very often, to satisfy the mother, you will be obliged to snip the frænum, or feign to do so, when unnecessary.

Sometimes the *lower extremities are distorted*, either by the leg being bent, or the foot turned inwards. In these cases much can be done if you begin early, but if you give way to the persuasions of the mother, and delay, ossification advances, and the disease is far more difficult of cure. An apparatus must be applied to draw the foot into the proper position, and for this purpose the tin boot is as good as any. You apply strips of plaster and a roller over the foot and leg first; and then the boot lined with soft leather, and over this a second bandage. As the child grows, the boot must be enlarged until the wished-for effect be produced.

Hare-lip. Children are occasionally born with a division of the upper lip either on one or both sides. If on both sides, the mouth is open into the nose, and you have also deficiency of the palate combined with it. If only one side, don't operate soon after birth, for you will produce irritation, perhaps giving rise to hydrocephalus, and in the small and tender parts of the child its screaming and crying will often tear through your dressings and sutures: wait until after weaning

and teething. In hare lip, with fissure through the palate, it is said if you operate early, the cleft in the bones will close. For the mode of performing this operation I must refer you to your surgical teachers.

Dropsy of the Spine, or Spinal Bifida, as it is called, from the spinous processes of the vertebræ being bifid, is divided into two varieties ; first, dropsy of the theca of the spine—or secondly, dropsy of the theca combined with hydrocephalus either external or internal. The spinal marrow varies very much in different cases ; the cauda equina may be perfect, or it may be wanting, the nerves not being wanting, but united to the theca. This you easily ascertain by the paralysis of the lower limbs. There are three states in which you may have the loins. First, you may have a circumscribed part of a brown colour, wrinkled and nearly flat, somewhat like a halfpenny or a cup, and below this the spinous processes are bifid. Or, secondly, you may have a tumour as large as an apple full of fluid and covered with skin. On pressure, you discover a gap and the bifid spine. Thirdly, the tumour may be burst open from delivery, and you have a loose bag wrinkled and of a brown colour, having a lacerated hole in some part of it from whence the fluid has been discharged. Ascertain if hydrocephalus exists, or if the cauda equina be entire. If merely dropsy of the spine, you may follow the treatment recommended by Sir A. Cooper, which, consists in taking a glover's needle, and puncturing the tumour. You may let out a tea spoonful, and then apply a piece of adhesive plaster over the orifice, and make pressure with a bandage ; you may tap it in this way forty or fifty times before you succeed in emptying the tumour, and then you may not succeed in curing the disease. Should you have no cauda

equina, you may tap, but the lower limbs still continue paralysed. Occasionally, tumours are formed in the neck, resembling spina bifida, but must not be mistaken for this disease.

Umbilical Hernia occurs in children, and may be either large or small. In the large hernia the sac is only formed of peritoneum, and is filled with intestine and totally uncovered with integuments: these cases admit of no remedy. I have heard of the peritoneum becoming studded over with tubercles, and cicatrizing. In small hernia, a perfect cure may be made—you may cure it by placing a circular piece of plaster over the navel, and over that a piece of sheet lead about the size of a half-crown piece; and over this another larger piece of plaster, and then a bandage, taking care to keep the intestine from protruding when you apply fresh dressings. In five or six months a perfect cure may be accomplished by this method. A second mode consists in applying a circular piece of plaster to the part, about the size of a sixpence, and so on, gradually increasing until you have formed a considerable compress; over this a bandage must be applied. The third and last mode is by means of the ligature. First empty the tumour of the intestine, and then apply a ligature to its base, but this is the roughest and most painful mode of the three mentioned, and therefore seldom used.

LECTURE XXXIV.

You should always ascertain, on your visits to the mother, whether or not the child has passed its urine

or fæces. The nurse sometimes tells you the child has made no water : this is often from inertness of the bladder. If we wait for the distention of the bladder, any fresh stimulus will make the bladder act. The warm bath may be used, or the nurse may be directed to rub the child's belly with her hand. In male children it may be from the prepuce not lying in the same axis as the orifice of the urethra, and in these cases the opening in the prepuce is often very small. In Hebrew children this is avoided, as they are circumcised on the eighth day. To obviate this, you may pass a probe between the prepuce and glands, and moving it about in various directions, dilate the aperture, first softening the parts with a poultice ; or should this fail, you must enlarge the orifice by means of the bistoury or any other cutting instrument.

Imperforation of the alimentary canal occurs sometimes in the upper part of the intestines, more frequently however, at the anus ; and it is then called imperforate anus. If the stricture be at the pylorus, you have vomiting, wasting, emaciation, and neither fæces nor bile pass by the anus. If the contraction be lower down, then the pylorus bile may pass by the anus, but the rest of the symptoms will be exactly the same. If at the anus, you have vomiting, emaciation, and no motion whatever. The stricture is sometimes situated in the rectum, about an inch above the anus. If you pass a catheter or any blunt instrument, you at once discover it ; or you may have the lower part of the rectum closed, and no anus whatever. Both this case and where the stricture is higher in the rectum, admit of relief and cure ; but I would advise you not to be in haste in laying the strictured part open, for by waiting you allow the fæces to accumulate above this part, and the rectum elongates and

comes more into view, and by waiting you also get a much better guide for your knife. You may wait eight or ten days. When performing the operation, you should bring on tenesmus by irritating the rectum, so that it may be pushed down as much as possible. Be careful to avoid making too large an opening, for you endanger wounding the hemorrhoidal vessels, and the child might bleed to death ; make the opening as large as a common sized catheter, and then dilate by means of bougies. If the infant can bear a bougie constantly in the part, so much the better ; in general, you must be content to pass a bougie three or four times a day. Be very careful not to allow the wound to close again ; use larger bougies, so as to ensure the further dilation. Attend to these cautions, for I have known several children die from hemorrhage, by the opening being made too large, and that too under the most eminent surgeons. Neglecting dilation renders a second operation necessary, which ought to be needless.

Children are sometimes born with *closed œsophagus* ; it may either be at the inferior or superior part. When the child is fed, or takes the breast, it turns livid in the face; the breathing is greatly impeded, or altogether stopped, and you have all the symptoms of suffocation, and sometimes also convulsions. For about half a minute the child seems to be dead, at the end of this time you have a gurgling noise in the throat, and the aliment is returned again by the mouth. The food gets into the pharynx and causes the closing of the rima glottidis, and it is only by the spasm ceasing that the food can return. The sinking of the little patient relieves the spasm. In these cases nothing can be done. It has been proposed to divide the strictured part. If you do, the food will

not pass into the stomach, but into the posterior mediastinum, making the case worse than before, instead of relieving. Don't give the child any food, for it is heart rending to think of the sufferings it occasions. Neither (let me advise you) take your medical friends to see a case of this kind because it is uncommon, and give it food to satisfy their curiosity, for the pain suffered from taking food is as bad as hanging. Leave it to its fate. Don't throw up nourishing injections, for these merely prolong the patient's sufferings without doing any good. When left to themselves they pine away and perish in a week, or perhaps rather longer. I have seen a child perish in this way, and I can assure you the sufferings were small; the child sleeps most of its time, wakes now and then, and looks about it as if for food, and then is easily lulled to sleep again, and so on, getting gradually weaker and more emaciated; it at length sinks. From my own observations I should say this is as easy a death as the human body can suffer. Don't let the feelings and persuasions of the friends interfere with your duty: they seem to think there is something horrible in starving the child to death, but it is more horrible to torture it by useless efforts.

Swallowing of the tongue is mentioned by Van Sweiten, but I have not seen it, neither have any of my friends; therefore, if it does occur, it is extremely rare. It is said that the tongue being loose, and not bound down by the frænum, the root gets into the pharynx: this would be recognised by the position of the tongue, and, by means of a spoon or any other instrument, might be pulled back again to its proper situation, and then the artificial respiration should be performed. But I suspect Van Sweiten to have mistaken the case for imperforate œsophagus.

Purulent Ophthalmia.—In these cases the conjunctiva is greatly inflamed, and the vessels are very full and turgid. After a time a large quantity of purulent matter is discharged, the eyelids are closed and greatly swelled, and when you open them to examine the eye, matter gushes out which had been confined between the lids. The eye itself does not suffer in general; in some rare cases it may spread to the proper tunics of the eye, but I have not seen it. The best *treatment* is a lotion composed of half a scruple of the sulphate of zinc dissolved in two ounces of rose-water, to be applied frequently to the conjunctiva by a sponge, which allows the fluid to drop gradually into the eye. You may use this lotion two, four, or six times during the day. If you cannot open the eye, you may use a syringe, taking care however that it is perfectly clean. In a short time the swelling and discharge abate, and the parts soon get well. These cases are far more alarming than dangerous, but they more properly belong to the surgeon than to me.

The next are the medical cases. Let me remark, that these cases are often made out with difficulty; but by observation and proper inquiries of the attendants, you may make out the case. *A list of interrogatories:*—First, on the complexion and skin; for children are liable to eruptive diseases. Secondly. On the plumpness or emaciation of the child. Some are ill from being fed; they are wasted, the skin becomes loose, the flesh flabby, and the child is attacked with diarrhoea or some affection of the head. Thirdly. On the temperature of the child. If eruptive fever is present, you have great heat of surface; but should the child be purged at the same time, the body may be very cool. Fourthly. Observe the breathing—if the child be stuffed, if it have rattling in the bronchia, inflammation of the lungs or croup may be coming on.

Fifthly. In convulsive diseases observe the head—if the scalp be hot, if the fontanels beat very strong, they show the origin of the disease. Sixthly. Observe the stools; if healthy, they are of an orange yellow colour, and smell like new milk. You may have purging, the bowels being moved perhaps twenty times in the twenty-four hours. In these cases the breast milk coagulates and passes in cakes, and the napkins are completely drenched by a quantity of serous discharge; the stools are slimy, green, and smell like vinegar: this purging is often from convulsive diseases or errors in diet; the mother or nurse perhaps has given the child food instead of the breast-milk. If the child vomits, observe the rejected matter. As the children become older you can observe their actions—if they are griped they will lie with their knees upon the belly—if they are troubled with worms, you have picking of the nose—if from hydrocephalus, the hand is very often lifted to the head, and the child avoids the light. You cannot tell much by the pulse; in infancy it is much quicker than in the adult; when born, the pulse is 140 in a minute; in the first year 120, in the second year 100; in the seventh year, or about the appearance of the permanent teeth, eighty-six; about seventy in the adult; and sixty in old age. In general, inferences drawn from the pulse in infancy will deceive you. Always inquire into the diet, for children are often fed with spoon meat, which brings on purging.

On Remedies. In giving opium, be careful to give it only in small doses; ζi of the syrup of white poppy in twenty-four hours is a sufficient dose for a child: $\bar{\zeta} i$ of this syrup, if genuine, is equivalent to a grain of opium. Blisters must not be applied needlessly in early life, for the skin is apt to slough—if you apply

them, do not allow them to stay more than three or four hours; take them off after this time, and although no blister is risen it will do. Abstraction of blood is very useful, and I will give you a table by which you may regulate the quantity. If the child be two months old, you may take away $\bar{z}i$ of blood either from the arm or external jugular vein; if four months, $\bar{z}ss$ to $\bar{z}ii$; if eight months, $\bar{z}ii$ to $\bar{z}iii$; if twelve months, $\bar{z}iii$ to $\bar{z}iv$; if eighteen months, $\bar{z}iv$ to $\bar{z}v$; if three years, $\bar{z}viii$ to $\bar{z}x$; if six years, $\bar{z}x$ to $\bar{z}xii$. With respect to the causes producing diseases in children, they may be referred to three classes. First. *Errors in diet*—some children are actually killed by stuffing; their friends give them ale, wine, or meat, under the idea of strengthening them; but instead of this they produce great heat and disturbance of the system, and often bring on hydrocephalus. Secondly. Substituting spoon meat for the breast-milk, causing diarrhœa and great emaciation. A little food is often as bad as a large quantity; the stomach of the child is yet too weak to assimilate it; it can make no blood from it; the whole passes off again by the bowels. Thirdly. Acrimony in the stomach and bowels will often produce purging, but this is only a secondary cause from the food given. If you have sour, griping, purging stools, take great care of the head give antiacids; if you wish to lock up the bowels give chalk; if the contrary, then give magnesia: a stronger antiacid perhaps is the carbonate of soda—watch also the state of the head, for you have often great irritability of the nervous system, and the child is very liable to *convulsive diseases*, arising generally from two causes. First: From the large bulk of the nerves in comparison to the body. Secondly: hurried action in the vessels of the head, not exactly inflammatory, but nearly allied to it, and

often terminating in watery effusion. If you have flushed cheek, hot scalp, rapid growth of the hair, sweating of the head, bright eyes, quick mind, and if the fontanels be open and you see them rise and beat violently, you must then expect *hydrocephalus*. Your treatment must consist in the application of leeches—in shaving the head and keeping it cool by the constant application of cold lotions—give purgatives, and allow the patient asses' milk for diet, and the head should be covered only with a light cap; the warm bath may also be used two or three times a day. If in spite of all your remedies the disease goes on, watery effusion is the consequence.

LECTURE XXXV.

Infants often have a disease called strophulus, intertinctus, or red gum; red spots are situated on various parts of the body—if in the severe form you have an elevation of the cuticle, and a sanious discharge; under this form it somewhat resembles measles, but is easily distinguished from this disease by not being attended with fever or any catarrhal symptom. The best remedies are castor oil, magnesia, and rhubarb, in general very little treatment being required.

Jaundice.—Infants very often are troubled with jaundice: if not from malformation of the biliary ducts, it is not at all dangerous, and is soon removed. I think it is merely from the too great secretion of bile; remember the very large size of the liver: opening medicines, castor oil, or magnesia, and a few day's patience, cures the disease. Infants are

often attacked with pain in the bowels, generally connected with some derangement of the alimentary canal; occasionally the head also is in fault, or it may be from mere flatulency; in this latter case the aqua anethi, with or without rhubarb or magnesia, may be given, increasing the strength of the mixture by adding one or more drops of the oleum ānethi.

Convulsive affections.—These are divided into two kinds, the acute and chronic. In the chronic form nothing can be done. In general, children are seized suddenly, and they may die from the first attack. The immediate cause of convulsions is determination of blood to the head and congestion of the brain, nearly amounting to inflammation; the head perhaps sweats very much, the body at the same time remaining perfectly cool. On observing the fontanels you perceive them beating stronger than at the wrist; this disease is apt to terminate in effusion into the ventricles. Should there be effusion, it will tend to increase the convulsions. Convulsive affections, if rightly treated, may do very well. Leeches may be applied to the temples, but taking away blood from the external jugular vein will be found the better plan, and it ought to be had recourse to very early to prevent the effusion from taking place; clear out the alimentary canal, for it may be from errors in diet. ℞i of ipecacuanha may be mixed with ℥ii of syrup and ℥x of water; a third part to be given for a dose, and to be repeated in twenty minutes or half an hour, if sickness be not produced. This will often purge also; if not, you may give calomel, scammony, jalap, or rhubarb, according to the age of the patient. Emetics do not cause a greater flow of blood to the head; this seems to be from their not producing any straining. Examine the fæces and egesta; pay great atten-

tion to the refrigeration of the head. The head should be shaved, or the hair cut close. You must keep the head constantly wet by evaporating lotions, as the liquor ammoniæ acetatis, applied by means of a sponge all over the head; this you may allow to dry, when you again wet it: this method will be found to produce greater evaporation than if the lotion was applied by means of napkins—consequently it is more useful. A very light cap made of German net is all the covering the head requires. Pouring cold water on the head by means of a coffee pot, will be found very beneficial; it may be used tepid at first, gradually diminishing the temperature till you use it cold. The tepid bath 97° of Fahrenheit, may be used; the child must be placed in the water all over except the face, and kept there for five minutes; if it seem perfectly at ease, you may keep it there for ten, fifteen, or twenty minutes, or longer. This bath may be used three or four times a day; it never produces much debility. Children sometimes scream at the sight of the water; if so, you may cover them over with a blanket and dip both together. If the child be very irritable, and cries and screams, and this seems to bring on convulsions, you may give anodynes. The syrup of poppies, say ℥ii or more, may be given in the course of the day. Look at the gums: if full, round, and red, lance them; it is better to lance them, although no symptoms of teething appear. If the child be about seven months old, lance them effectually; if the cicatrix heals, it gives way again sooner than the other parts—look at the colour of the evacuations: if of a green appearance, two or three grains of the hydragarum cum cretâ may be given every night, or every night and morning.

Venereal Affections. If the mother be affected, it

may be communicated to the child while in the uterus ; it may be communicated by means of the placenta, or during the birth, if the mother have sores upon the labia, and the nose, lips, or eyes of the infant may be affected with ulcers. If the child have an ulcer on the lips, it may be communicated during suckling to the nipple of the nurse, and if she suckle another child, the nipple may give the disease to it. If the mother or nurse have the disease, the milk may give it to the child. Dr. Lowder relates a case in which the child had venereal eruptions ; it was cured by mercury ; it appeared again, again was cured by the same means : it came on a third time, and was a third time cured ; he suspected the milk to be the cause of this, and had the child weaned, which prevented the return of the disease. In all cases of eruptive disease, always suspect it to be venereal ; if you think or discover it to be from the nurse, change ; you need not tell the friends of the child your reasons, but you had better tell the nurse not to hire herself again any where else. If from the mother, get a healthy nurse, or wean the child. *Treatment.*—You may give calomel, or blue pill, according to the age of the child, and it must be continued a fortnight after the disease has disappeared. Children are sometimes affected with watery diarrhœa. You may have fifteen or twenty stools in the twenty-four hours made up of slime, serum and coagulated milk, or of a green colour, very much resembling chopped spinage ; the child becomes emaciated very quickly : the cause of this disease in nine cases out of ten will be found on inquiry to be from artificial food. If wholly fed, return to the breast milk ; if partly fed, leave it off and let the child have nothing but the mother's milk : the bowels may be soothed by the following mixture :

R Conf: aromat: ʒi
 Syr: pap: alb : ʒi
 Spt: nucis mosch: ʒi
 Aquæ ʒi misce.

A teaspoonful to be given three or four times a day. The proximate cause of the disease is from an inflammatory affection of the mucous membrane of the bowels. If the child should have this disease when older and stronger, the antiphlogistic plan of treatment will be found to answer best. Leeches and blisters to the abdomen—low diet, &c.

Apthæ or thrush. Infants may be affected with this disease, either in the mild or severe form. In the mild form the lips, tongue, and mucous membrane of the mouth are alone affected; these parts present a very red appearance, and specks, like small patches of coagulated milk, are formed all over the parts; this seems to be a diseased secretion of the mucous membrane. It is said children are drowsy before the disease makes its appearance. If more severe, the whole mucous membrane of the intestinal canal, from the lips to the anus, are involved in the disease; but the small white specks are not formed in the bowels.

Treatment: give the mixture recommended for watery diarrhœa, and wash the mouth with the following gargle:

R Boracis ʒi
 Mell: rosæ ʒi misce.

This may be applied by means of a feather, or what perhaps is better, the nurse wraps a piece of rag round the finger and rubs the parts over three or four times a day.

On the Management of Women after Delivery.—Although in general women would do perfectly well without any peculiar method, yet it is certain that

from delivery they become more susceptible of disease, and therefore it is that all women, however robust, are placed under a particular plan of treatment, and of this I now proceed to speak. As soon as the child is born, examine the perineum, more particularly if from largeness of the child, rigidity of the parts, or face presentation, you have reason to suspect laceration has taken place, and at this time it can readily be done ; but if you neglect this, and afterwards have symptoms leading you to suspect laceration, and should then want to examine, you would run great risk of alarming your patient, besides yourself being kept in a state of suspense and anxiety. Should laceration exist, it is easily known by the touch, but if doubtful after this, you may inspect the parts with but little exposure of the person. Having satisfied yourself that no laceration exists, you next proceed to cover the genitals: this you do by taking a napkin, previously well aired and dried, and folded in an oblong form ; apply it between the thighs upon the genitals, carrying it up before and behind. You now take a second napkin folded in the same manner, and pass it underneath her person, so as to protect her back and hips from the blood and moisture of the bed ; you then take a third and apply it over the hips from behind. By the application of these napkins, the patient is protected from the wet and damp of the bed, and from any danger of taking cold, of which they are often afraid. When the placenta has come away, you tighten the bandage on the abdomen, should you have applied it before delivery ; if you have neglected this, you must glide your hand under the patient's person, and draw a table cloth or towel so as to encircle the abdomen, when you pin it sufficiently tight as to give a feeling of agreeable support.

The women often feel before bandaging as if they were falling to pieces. More particularly bind up the abdomen, if the coverings have been greatly distended, as from a large child, too great secretion of the liquor amnii, or a plurality of children. Gaitskill's bandage is well adapted for this purpose, but during the application of this or any other bandage, the patient must not be raised to the sedentary posture; she cannot lie too still. Again, after delivery, more especially if there has been much exertion, the patient will be very weary and exhausted; this may be relieved very effectually by some cordial: for this purpose you may give a table spoonful of rum, gin, or brandy, according as the patient may like best, mixed with five or six times its quantity of warm water, and to which a little sugar and nutmeg may be added. Should you have floodings to any extent, the woman must remain as she is, unmoved, ten or twelve hours; in general, however, you have no flooding in these cases, and the woman need not lie more than three-quarters of an hour or an hour; in the mean time the nurse may wash and dress the child, and attend to the room. I would advise you not to allow the woman to sit upright, for she is very liable to hemorrhage, and I have seen a woman die from this cause; the bed should be prepared before delivery: the patient may now be put into it with as little disturbance as possible. Without urgent necessity calls you away you will do well, more especially if beginning practice, to wait in an adjoining room while the patient is put to bed, for it has repeatedly happened that women have died of hemorrhage within the first hour, either internal or external. After the patient has become comfortable, you may again see her; feel the pulse—observe the countenance—inquire if there be

any bleeding—examine the bandage to find if it have become slackened—grasp the womb to satisfy yourself it is fully contracted, and that no blood is collected in its cavity; should there be internal hemorrhage, blood gushes forth when the womb is grasped, the countenance becomes pale, and the woman turns very faint. If the woman has had several children before, she may be troubled with after-pains: to relieve these, you may give five and twenty or thirty drops, not minims, of the tincture of opium directly, and leave another for the patient to take in an hour, should the pains remain unabated. If the first child, it is very likely the woman will have little or no after-pains. The diet during the first three or four days may consist of gruel, milk and water, or arrow-root. London milk requires no dilution, as this is done for you. In delicate individuals, beef tea may be required. After delivery you should visit your patient daily, for although women in general do well, more particularly in the country, yet it must not be forgotten they are liable to numerous and formidable diseases, and on this account require watching during the first two or three weeks. It is a popular opinion, that if the woman get over the ninth day, she will do well, and this contains much truth, for the most formidable diseases occur within the first three or four days after delivery. The diseases to which they are liable are puerperal fever, inflammation of the mammæ, milk fever, and phlegmasia dolens. If puerperal fever be prevalent at the time, you ought to see your patient twice a day; if not, and the woman is going on very well, once daily is sufficient. When visiting your patient, you enquire about the secretions—if the bowels have been unloaded—if she has made water, if the lochial discharge be in pro-

per quantity—if the head be affected—if the nervous system be easy—if the breasts be painful, if the after-pains be severe—if the respiration be free—mark the pulse—enquire if the abdomen be tender—if the appetite be good—if the patient be troubled with sickness—if the milk be secreted. If instruments have been used, enquire if the softer parts be much swelled—if the bladder acts properly ; for in these cases the bladder is sometimes paralysed, and may contain two, three, or four pints of urine, although at the same time it may be constantly dribbling away, giving rise to pain, spasm, and a considerable degree of fever ; also if the rectum preserve its retentive power. The pulse should always be carefully counted ; if under or not more than 100, all is well, for I do not know of one dangerous disease in which the pulse would not be higher than this ; but at the same time you must not infer that any disease is about to come on, because the pulse is above 100, but it is an urgent reason for you to watch the patient more narrowly, and be more particular in your inquiries. The diet for the first few days must be confined to tea, toast and water, arrow-root, gruel, or milk and water. After three or four days have passed over, and the danger of milk fever is gone, you may allow the patient mutton, chicken, veal, or other broths ; in three or four days more the white meats, as chicken, veal, fish, &c. In a few days more mutton and other meats, with table beer for drink, if it agree. After a time it may be necessary to give bottled porter freely, to increase the supply of milk. You may begin by allowing one-third of a pint for a daily dose : then half a pint, increasing it afterwards to one, two, nay even sometimes to three pints in the course of the day. When this beverage is taken by women giving suck, it rarely affects the

head, but it seems to act on the mammillary arteries, increasing the supply of milk. If you will give medicine, the spermaceti draught may be given, slight diaphoretics and anodynes, if necessary. About the third day you must give purgatives: the infusion of senna with salts acts speedily on the bowels; castor oil is milder in its operation, and does not purge the child: or you may give the extract of colocynth, five or ten grains in the form of a pill. The patient should not get into the erect position before the third day, nor be allowed to get out of bed before the fifth, and then she ought to lie on a sofa, and not, as is generally the case, sit in an easy chair. I think that numerous cases of procidentia uteri are from getting up too soon. If in summer the patient may leave the room about the second or third week, but in winter not till the end of the month. In your visits you must look to the child; if it be fat and plump, and grows rapidly, all is well; but if it wastes, you must inquire into the diet, and you will generally find that either clandestinely or openly it has spoon meat; it is well too to inquire into the evacuations; if only two or three daily, and of an orange yellow colour, all is well; but if allowed spoon meat, you will often find it has ten or fifteen during the day; here you must give the aromatic mixture formerly mentioned, and return to the human milk, the best of all aliment for the young infant.

LECTURE XXXVI.

On the gravid Uterus.—The unimpregnated uterus varies somewhat in size, but its average bulk is that

of a small pear flattened, but when altered from pregnancy it becomes greatly increased, and its shape is more oviform ; but this also varies in different women : something also perhaps depends on the position of the child at the end of gestation : it is about one foot long, three-quarters of a foot broad ; its walls are a quarter of an inch in thickness,—it occupies three-quarters of the abdominal cavity ; and is placed obliquely, the fundus forward towards the umbilicus, the mouth backwards and downwards towards the middle of the sacrum. The intestines are situated above and behind it, but chiefly behind, and when the bladder is loaded it rises upwards out of the pelvis, and is then placed between the uterus and abdominal coverings. Sometimes the womb deviates from this position : when this occurs, it is called the obliquity of the womb, and it was formerly supposed that this was the cause of laborious labours. It may be produced by a laxity of the abdominal coverings, by the bold curve of the lumbar vertebræ, which throws the womb forwards, and also from distortions in and about the brim of the pelvis. A bandage well adapted often gives relief. The uterus, when not contracting on its contents, is regular and feels moderately hard to the hand ; when at the end of gestation, or in premature parturition, it gets very hard, and I think that labour might be known to be coming on from this sign. Although the uterus in general is oviform, yet from the deficiency of the liquor amnii, it may be very irregular, and all the parts of the child be felt very distinct, more particularly if the uterus should be softer than natural, leading you to suppose the case to be extra uterine pregnancy. In general the uterus does not fluctuate, but where there is dropsy of the womb from the large accumulation of the liquor amnii, sometimes amounting to three or four gallons, an evi-

dent fluctuation is felt on striking the abdomen, and I have seen five or six cases of this kind myself; beware therefore of rashly having recourse to the trocar and canula, supposing the case to be common dropsy. It may be known by the sudden enlargement of the abdomen,—by the patient believing herself pregnant, by the great pain and spasm caused by the rapid distention of the uterus—and on internal examination by feeling the os uteri more or less dilated, and the membranes protruding, the womb contracts, ruptures the membranes, discharges the waters, and afterwards expels the child, which is sometimes as large as usual, but often not larger than at the third month: or should the membranes be very tough, you may slightly puncture them. If the swelling be not very great, and the woman in the early months, you may leech, foment, give opium; should the symptoms not give way, you may puncture the membranes through the os uteri with any blunt instrument, making a small opening so as to allow the water to escape more gradually, and the abdomen should be carefully bound up with Gaitskill's, or a common bandage. On examining the womb at the end of gestation, we find the *nerves* greatly enlarged, and apparently increased in number. The *absorbents* in the virgin womb, few and small, are now large and very numerous, and it is to this cause we may attribute the rapid absorption of the womb after delivery. The *arteries* are greatly increased in size, and ramify in a tortuous course through the muscular substance of the womb, diminishing the flow of blood, consequently rendering the patient less liable to hemorrhage; they are situated chiefly on the right and left side, and also to that part where the placenta is attached. The *veins* of the womb are large, and run in a straight course.

The *muscular* structure of the womb becomes more developed ; so much so that if you take it to any anatomist and ask him what structure of the body it is, he at once pronounces it to be muscular ; I think no one can doubt it : it is indisputable in all mammiferous animals. In the rabbit you find the muscularity of the womb much more conspicuous than the intestines. By its possessing great power, sufficient alone to expel its contents—by its being demonstrable to the eye—by its contracting under a stimulus ; when once aroused, it goes on contracting until it has expelled its contents, whether it be a foetus, the placenta, or clots of blood—and by the firmness with which your hand is grasped during the operation of turning : it is by all these signs that I maintain the human womb is muscular, although denied by Blumenbach and others. The muscular fibres are not regularly distributed all over the womb, but on the inner surface, round the opening of the fallopian tubes there is a distinct circle of muscular fibres, called the *musculus orbicularis Ruschii*.

The thickness of the womb varies in different women, but in general it is about one-third of an inch thick. Occasionally the womb is much thicker than this, or it may be thick in some parts, and thin as brown paper in others ; hence the danger of carrying the hand into the uterus needlessly. About the neck of the womb there are situated a number of mucous follicles called the *glandulæ nabothi*, which are of large size, and secrete a good deal of mucus during delivery, and it is to these I believe may be referred the seat of malignant disease. The course of arteries in the unimpregnated womb are vermicular. The uterus is more or less flaccid after delivery, more particularly if the quantity of the liquor amnii has

been unusually large, and the abdominal coverings, especially if the woman has had several children, are also very flaccid, so as to render stays or a belt necessary. The vagina also is flaccid, and I believe is never reduced to the virgin size—hence the liability to prolapsus uteri. The womb, by reason of its large and numerous absorbents, shrinks very fast. In the small space of one month it is only twice as large again as in the virgin state; at the end of two months it is nearly reduced to its natural size.

LECTURE XXXVII.

The uterus enlarges but slowly the first four months; at the end of the third month it is about as large as the head of a foetus; at the end of the seventh it is as large as the whole child, and at the end of gestation double this size. This is caused partly by the dilatation of the uterus from the growth of the ovum, and also from an increased growth of the uterus itself. During the first four months the body of the womb chiefly enlarges, but in the latter months is confined chiefly to the neck of the womb. The neck of the womb in the fourth month is about an inch and a half in length; at the close of the sixth month the neck has lost one-third of its length; at the end of the seventh another third; and at the end of gestation the neck is entirely gone, and forms part of the body of the womb. We may form some notion of the length of gestation by measuring the length of the neck of the womb, and there are two

methods of doing this—first, by passing the finger, as in the common examination, into the os uteri, until you feel the membranes ; but this, unless you are very skilful, is a dangerous mode, as you are apt to disturb the ovum. The second and better method is to pass the finger between the symphysis pubis and uterus, until you feel the body of the latter, then slide your finger downwards to its mouth, the distance between this and the body being the length of the neck.

Until the fourth month the fundus of the uterus is situated in the pelvis, and if the pelvis be large it may be low down. In the fifth month it rises out of the pelvis, and it is placed between the symphysis pubis and navel ; at the sixth month it has arrived nearly opposite the navel ; at the seventh month it is above the navel ; at the eighth month it is between the navel and scrobiculus cordis, at the end of gestation it is resting against the scrobiculus cordis. In the early months the uterus settles in the pelvis and bears on the rectum and bladder, giving rise to tenesmus and micturition ; but the most troublesome symptom is the bearing down of the uterus—in rare cases protruding beyond the external parts. At the fifth month the uterus rises above the brim, and gains a different bearing, which relieves the patient of all these troublesome symptoms ; though sometimes the uterus becomes wedged, as it were, in the pelvis, pressing greatly upon the bladder and rectum. In these cases the bladder should be emptied by means of a flat catheter, and then the womb may be pushed above the brim, if possible the woman being confined to the horizontal posture for a few days. When the womb has thus risen above the brim, should the woman have irreducible hernia, it is liable at this time to become strangulated, but this is a very rare occurrence, and

you may be engaged in a large practice all your lives without meeting with a case: however, should you have a patient with irreducible femoral hernia, you ought to acquaint her with the incipient symptoms of strangulation, that she may let you know immediately should it occur. In a case of this kind, perhaps your only effectual remedy will be to rupture the membranes and discharge the liquor amnii, allowing the uterus to contract and empty itself, when the collapse of the womb would take off the pressure on the gut, and, I should think, cure the patient: I know of no other method likely to relieve in these cases. In the fourth month "*quickenning*," as it is called, begins—often attended with sickness and perturbation of mind, and a feeling of motion, referred by the mother to the movements of the child; but it is not from this, but from the uterus rising above the brim. Sometimes this takes place very suddenly—in other cases so slow, that it escapes the notice of the woman altogether.

Where a foetus is born alive, it is always followed by a placenta and membranes. In the foetus there are certain peculiarities of structure and function worthy of consideration. In the foetus, and during infancy, the bones of the cranium are more numerous than in the adult, and are united by intervening cartilage instead of the serrated junction we see in later growth; but these have their advantages; for, by their softness they allow the head to change its form; from the edges of bones overlapping each other, they allow the head to become smaller and smaller—of great consequence where contraction of the pelvis exists. In the foetal eye, before the seventh month, we find a peculiar membrane (*membrana pupillaris*), thin and vascular, arising circularly from the margin of the pupil, and dividing the aqueous humour into two per-

tions. The use of this membrane is not known. It has been supposed by Blumenbach that as the eye grows it may be designed to keep the iris on the stretch ; but to me this is not a sufficiently satisfactory explanation. At birth, and for a considerable period after, the nervous system bears a very large proportion to the rest of the body. Before the birth of the foetus the *lungs* are of a compact texture, and do not contain a particle of air ; but the whole structure becomes distended as soon as the child breathes. It is a general assertion that if the child be born dead the lungs will sink when thrown into water ; and on the contrary, should the child have breathed they will swim. But it is very possible for the lungs to float although the child was born dead ; for gas, as I myself have seen, may form in the lungs from early putrefaction, or the mother may try to inflate the lungs by the mouth, and if much force was used some small quantity of air might find its way into the lungs, or the child may sigh once or twice on coming into the world, and then die irrecoverably, of which I have seen several instances. In all these cases I can conceive the lungs might float. But although the floating of the lungs is not a satisfactory proof of the child's having been born alive, yet the sinking of the lungs is a very strong one that the child was born dead. The lungs of the adult become hepatized from disease in some rare cases, and so may the lungs of the foetus, but far less common even than the adult—nay, I should say the chances are not one in ten thousand of this disease occurring in a case of child-murder, where the proofs as to whether the child was born alive or dead are required ; so that I should say the sinking of the lungs was sufficiently satisfactory for practical purposes of the death of the foetus. The *heart* of the foetus dif-

fers from the adult in having both ventricles of equal thickness, and also in having a communication between the auricles by means of an opening called the foramen ovale. In the *blood-vessels* also peculiarities exist. In the foetus there is a communication between the aorta and pulmonary artery by means of a small canal called the *canalis arteriosus*, which is closed shortly after birth. In the liver there is also a short vein peculiar to the foetus, called the *ductus venosus*, forming a communication between the vena porta and the vena cava ascendens: this is also closed soon after birth. Again, the *umbilical arteries* and *vein* are peculiar to the foetus. The arteries are given off from the internal iliacs, and, rising upwards as far as the navel, pass out there, forming with a vein the umbilical chord, and arriving at the placenta, terminate by numerous branches. These arteries have corresponding veins, all of which unite, and form one trunk—the *umbilical vein*, which passes to the navel and enters the abdomen, gets to the portæ of the liver, and there ramifies in conjunction with the venæ portarum and the hepatic artery, affecting chiefly the left side. This vein becomes closed after birth, and forms the ligamentum rotundum of the liver. It has been asserted the *foetal blood* does not coagulate; but, to prove the incorrectness of this, lay open the placental portion of the umbilical chord after being detached from the child, and collect the blood in a cup, when, after allowing it to stand a few hours, you find it separates into serum and crassamentum—not perhaps so firm a coagula as the adult blood, but yet well marked. By this experiment you may also disprove the assertion of Bichat and others, that the foetal blood does not become scarlet like the adult on exposure to the air. After allowing the blood to stand for some time, and

then turning the bottom of the coagula upwards, the difference between the scarlet of the upper surface and the dark red of the under one is very apparent. The *stomach* of the fœtus is in general empty, or containing merely mucus mixed with gastric juice. The *bowels* are longer considerably than in the adult; these, together with the *liver* and other *chylopoetic viscera*, are the cause of the rapid growth of the child, and also the reason why the abdomen seems to be so large during infancy. The *liver* is of very large size, and continues so for several years after birth—not unlikely, if ignorant of this, to lead you into error on post mortem examination, the large liver being set down as produced by disease. The *capsulæ renales* are very large in the fœtal state, and contain a quantity of secretion, but their use is not known. The *kidneys* of the fœtus also differ from the adult, in being made up of a number of lobes resembling other aquatic animals. The *clitoris* in female children is larger in the early than the latter months; be careful, therefore, of mistaking a female abortion for a male. At the end of gestation the *testes* in the male, which before were lodged in the abdomen on each side the spine, descend into the scrotum generally about the seventh month; occasionally, however, they fail to descend, or descend partially, or one descends and the other remains; the one remaining in the abdomen, or at the abdominal ring, is generally reduced in size—perhaps not more than one-third the size of the other—though I doubt, except from the strong mental feelings it causes, whether this defect creates impotency. The *thyroid* and *thymus glands* are larger in infancy than the adult—the thymus more particularly; it also contains a whitish secretion, the use of which, however, is not known. The *lower extremities* in the child not

being wanted, are not so well developed as the superior—the latter being wanted, I presume, to lay hold of the breasts.

Although there are certain *organs* which seem solely adapted to the foetus, yet it is a curious fact, that by far the greater number are designed to act after the birth. The *heart* itself is not even necessary to the foetus, and of this we have a proof in those monstrous structures which are formed with merely the lower extremities; the abdomen containing nothing perhaps, but a few folds of intestine, and the pelvic viscera. The *lungs* again are useless in the foetal state, the placenta performing the same function to the foetus the lungs do in after-life.

The *liver, stomach, intestines*, and the rest of the *chylipoietic viscera*, may be wanting to the foetus, and yet it will be well nourished. The *brain and spinal marrow* too are not essential to the foetal life, since it is not uncommon to meet with cases of this kind where the body seems to be very well nourished, and even of large size. *Secretion* goes on but sparingly in the infant, more particularly in those parts not wanted till after birth; as the *larynx, stomach, liver, kidney, &c.* Yet in the formation of *muscle, bone, nerve, &c.*, we find it more active even than after birth. *Sensation* is not very acute in the child I allow, yet that it exists, I think none can doubt. In turning I, to satisfy myself on this point, have insinuated my finger into the child's mouth, and have found that it has sucked it the same as it would have done after birth, showing that the child not only felt hunger, but that the mind was in action, and also that it had sensation. The foetus immersed and floating in the liquor amnii is generally in a contrary position to that of the adult, being placed with the head exactly

over the os uteri. The chin is pushed down on the chest; the thighs are bent upon the abdomen, and in the space between the head and knees the arms are placed, the back being slightly incurvated, seemingly lying in a state of repose. Occasionally, however, this position of the child varies: you may have, as formerly explained, the breech, the arm, the shoulder, or the feet, lying over the os uteri, forming the presenting part. Wherever a foetus is born alive, it is always followed by a *placenta and membranes*. In the sow, and also in the mare, we have *membranous placentas*, consisting of membranes unusually vascular. In ruminating animals we have a different structure, the placenta being made up of a number of lobes; in some cases, as many as 50 or 60: this arrangement I suspect to be for facilitating motion without endangering its detachment. Or the placenta may be large, round, flat, and thick, like a cake, as the hare or guinea-pig. Or again, you may have the *zoniform placenta*, as it is called, very long, and encircling the uterus like a belt, as in the cat, dog, &c. In the uterus of the sheep there are a great number of villi, which contain cells, and secrete a milky fluid, which is, I suppose, for the due nourishment of the foetus and the membranes. The chorion also contains a number of vascular excrescences, which shoot into the substance of the womb like a tree into the earth; this tassel of vessels consists of the capillaries of the umbilical arteries and vein. Injection has not as yet been made when the uterus has been injected to pass into the excrescences of the chorion; neither has injection of the placenta filled those in the uterus.

The *human placenta* is made up of a great number of cells in communication with the mother, and a

large quantity of vessels in communication with the child, the vessels emptying into the cells, yet not in direct communication with the uterus. If you inject the placenta you fill the cells, but you cannot get the smallest quantity of injection to pass into the uterus, and although there are two different kinds of blood circulating, there seems to be no more communication than the blood with the air in the lungs, proving that the communication between the uterus and placenta is only through the medium of the colourless and more subtle parts of the blood. Neither nerves nor lymphatics have been clearly demonstrated in the placenta. The placenta is covered by membrane, and marked near the insertion of the chord by numerous large vessels.

The *situation* of the placenta is generally in the upper part of the uterus, either in front or laterally behind. Occasionally it is situated over the mouth of the womb, forming one of the varieties of flooding cases in which the child must be brought away as soon as possible by the operation of turning. In general you have as many placentas as children.

The *umbilical chord*, arising at the navel and terminating at the placenta, is composed in the human ovum of two arteries and one large vein, which when distended is nearly the size of the little finger, connected together by cellular membrane, mixed with a gelatinous substance, and covered over by an expansion of the chorion. Its general length is about two feet; though occasionally, as I formerly mentioned, it is sometimes much shorter than this, either from original formation, or from its being wrapped round some part of the foetus, generally the neck. In the *mare* the umbilical chord is composed of two arteries and two veins. In the *calf*, besides the vessels there

is another canal called the *urachus*, which leads from the bladder into a membranous receptacle called the *allontois*, which seems to contain some portion of urine. In the *puppy* you find an artery and vein given off from the mesentery, passing with the vessels of the chord, and ending by numerous minute capillaries on a peculiar membrane called the *tunica erythroides*. *Knots* are occasionally formed on the chord ; one, two, or even as many as three, may be formed at the same time. This may be from the chord being coiled around the os uteri, and the child passing through it forms the knot at the moment of birth. Although the *insertion* of the chord is generally in the centre of the placenta, yet it occasionally happens that it is marginal, or nearly so. In these cases I believe the placenta is found more adherent than when the insertion is central.

The *membranes* are three in number. The outer membrane is called the *tunica decidua* ; the inner the *amnion* ; the middle the *chorion*. The *decidua* derives its vessels, and seems to be generated from the uterus ; it is thick, reticulated, easily lacerable, and very vascular ; so much so, that in the early months of pregnancy it resembles a mass of flesh. It is divided into two portions, one connected with the uterus, the other with the chorion, the placenta being between the layers. The use seems to be to form a communication between the foetus and uterus, and also to form a bed for the formation of the placenta. The *chorion* is a thick, strong, and, except during the first weeks of gestation, transparent membrane : it has few vessels, and these come not from the uterus, but from the umbilical vessels, the chorion forming as it were a part of the child ; indeed it seems more essential to its existence than either its legs or arms. In the early

months it is covered with a fine shag, which is nothing more than minute capillaries for the formation of the vascular part of the placenta. The *amnion* is thin, transparent, and very strong; its vessels are very minute, and cannot be injected in the human subject, but it may be done from the chord in animals. It gives strength to the ovum, and secretes the liquor amnii. In the early months there are four membranes. The fourth, called the *tunica decidua reflexa*, is formed from the decidua uteri. After impregnation, the uterus secretes a gelatinous fluid, and into this vessels pass, the secretion becomes organized, and the rudiments passing from the fallopian tubes, push the membrane along with them, forming a second or reflected membrane. This membrane grows only for about two months, and then ceases, and either disappears entirely, or nearly so, for it cannot be traced. The reason it ceases to grow is said to be this: during the first week the rudiments would have a tendency to drop out through the mouth of the womb but for this membrane, and that when the foetus gets sufficiently large to block up the os uteri, the membrane ceases to grow, because it is no longer wanted.

LECTURE XXXVIII.

Besides the membranes already mentioned, there are others. In the ovum of the cow there is a membrane called the *allontois*, between the chorion and amnion, forming a bag capable, when distended, of containing from one to three gallons of fluid. It communicates with the bladder by means of the

urachus formerly mentioned. In the ovum of the bitch there is also a delicate and vascular membrane called the *tunica erythroides*, supplied by an artery and vein from the mesentery of the puppy. In the human ovum there is a membrane of a globular form, called the *visicula umbilicalis*, as large as a pea, which contains a coagulated yellowish white fluid, and is situated at the edge of the placenta, and is found both in the early and latter months ; it communicates with the mesentery of the fœtus by a long and slender filament, but its use is not known ; it seems to resemble the *tunica erythroides* of the puppy rather than the allantois of the calf. The *placenta*, as I have before stated, is made up of two parts, namely, the cellular and vascular. The *cellular* part of the placenta is made from the decidua uteri, secreted from the inner membrane of the womb. The *vascular parts* form the fringe part of the chorion, which are the capillaries of the umbilical arteries and vein, and therefore belong to the fœtus. The *uterine excrescences* of the cow correspond to the cells of the placenta, and the chorion shoots its vessels into those excrescences.

The *liquor amnii*, (our first element), in which the fœtus floats, is secreted by the amnion, in various quantity ; it may be only a few ounces, or it may be from two to three gallons ; the average quantity is from half a pint to a pint. It forms a bed for the fœtus, and protects it from compression ; that it does this is clearly demonstrated, for it is not uncommon in cases of twins for the bag of one child to be ruptured, and the child thus brought under the muscular contraction of the uterus becomes crushed and flattened, while the other, not having lost its protecting medium, is altogether safe, thrives, and arrives at the full term of gestation. The *liquor amnii* has another

office to perform at this time ; namely, by acting on the os uteri like a wedge, it dilates that opening ; hence the necessity of leaving the disruption of the membranes to nature, or at least not breaking them till the os uteri is fully dilated. These then are the three chief offices of the liquor amnii. It has been said, the liquor amnii was intended for the *nourishment* of the foetus, but to this I cannot assent, for it consists merely of a very small quantity of coagulable lymph, with a little muriate of soda, the rest being water ; besides it is secreted by the foetus, for the amnion is as much a part of the foetus as your skin is a part of your body ; and if the liquor amnii be discharged, the child will live just the same ; and if the foetus have neither head, stomach, nor bowels, it will be just as well nourished as if it had all these parts in perfection, evidently showing the foetus to be nourished by other means than this.

The *circulation of the blood* is divided into two kinds, namely, the *fœtal* and the *maternal*. The circulation of the *maternal blood* is very simple ; it flows into the cells of the placenta, and is taken up by the capillary arteries, and it is the blood flowing from these cells in miscarriage that produces those copious floodings formerly treated on.

In the *circulation proper to the fœtus*, the blood is carried from the internal iliacs to the placenta by means of the umbilical arteries ; after ramifying through its substance, it is returned by the umbilical vein to the under surface of the liver, where it empties itself into the vena portarum. Here, for the convenience of demonstration, it may be divided into three parts ; two of which flow forward by the ductus venosus into the vena cava inferior, to the right auricle of the heart. A third and remaining part flows

through the liver, and is returned in the usual way by the *venæ cavæ hepaticæ* into the *vena cava inferior*, and is now also carried to the right side of the heart. The three portions of blood being collected in the right auricle, stimulate it to contract; one part passing directly through in the left auricle by an opening called the *foramen ovale*; the other flowing into the pulmonary artery. But here it divides; one part passing through a small canal called the *canalis arteriosus* into the aorta, while the remaining portion passes forwards to the lungs, and after ramifying through their substance, is returned to the left side of the heart by means of the four pulmonary veins. All the blood having now arrived on the left side of the heart, is expelled into and flows along the aorta, though not at the same time, and after being distributed to all parts of the body, is returned by the internal iliacs into the chord, and from thence into the placenta. The foetal circulation also differs from the adult in but a small portion of the blood passing through the lungs, say not more than one-sixth or one-eighth of the whole quantity; for as the blood cannot be ventilated in the lungs, only a sufficient quantity is sent to supply them with due nourishment. Blood is sent into the aorta by both sides of the heart, the placenta performing the office of lungs.

It is a well-known fact in surgery that in tying blood-vessels those parts below and above the ligature as far as the next branch contract and become closed, and dwindle away into ligamentous chords; so it is with the veins, openings, &c. of the foetus. On the chord being tied, the umbilical arteries and vein close; the arteries are closed and form bands as far as their common trunk, the iliacs. The vein also closes, forming the *ligamentum rotundum* of the liver. As soon as the child breathes the blood flows in a great measure through

the lungs, little or none passing through the *canalis arteriosus*, and *foramen ovale*; from which cause, together with the pressure of the expanded lungs, they shortly become closed, so that after birth the adult circulation begins by all the peculiarities of the foetal state being done away with. The *action or function of the placenta* I believe to be to nourish the foetus and perform the office of lungs. The maternal blood lodges in the cells of the placenta, and the delicate parts are taken up by the capillaries for the supply of the foetus; this organ does not appear to be for the purpose of decarbonizing the blood, for you will find on examination the blood taken from both portions of the placenta to be of the same dark red tint, greatly differing from the bright scarlet hue of the arterial; yet it is very certain that the placenta performs some other office which the lungs do, very essential to life, but with which, in the present state of our knowledge, we are entirely unacquainted; yet we are certain that the placenta performs the same offices to the foetus which the lungs and chylopoietic viscera do after birth. As the shell of the egg is not formed in the ovaria, but is added when in the oviduct, so also are the membranes or external envelope of the foetus when in the uterus. The *ovaria*, or *testes mulebria*, according to the older anatomists, are of a somewhat oval form, resembling an almond somewhat in size and figure; they have a proper peritoneal, and also a cellular covering, which last is full of a number of small and unequal sized vesicles, varying in size from that of a mustard seed to a large pea, and in number from fifteen to twenty. These *vesicles* or *vesiculæ de graaf*, as they are called, are the eggs or germ of the human species: near the ovaria, and covered by the layers of the broader ligaments, are the *fallopian tubes*, or *oviducts*; they are of small size, open at each end,

and taking a vermicular course, enter the womb laterally near the superior part; the ovarian end is fringed, and is called the *morsus diaboli*, and is also wider (I suppose for the first reception of the rudiments) than at the other extremity, for there a bristle can hardly be passed, whereas in this you may introduce a large probe. When impregnation takes place, one or more of these vesiculæ de graaf become the subject of conceptive actions, and supplies of nourishment from the neighbouring parts are pouring in—the eggs enlarge in size, and project beyond the surface of the ovary so as to form the mammillary processes, and all around the vesicles, which are thus enlarging the ovum, becomes more vascular than before. About this time the projecting mammillary process is seized by the muscular fringed extremity of the fallopian tube, somewhat resembling the child seizing the breast. The mammillary process lying in this manner over the orifice of the fallopian tube, is at length laid open by ulceration, and discharges its contents (a pulpy fluid) into the canal; after which the rudiments by a sort of peristaltic action pass by little and little into the uterus. The time occupied by the passage of the rudiments seems to be about eight and forty hours from the period of intercourse; indeed, I believe they must always pass during the first week, for if the passage occupied longer time, the rudiments would become too large to pass the tubes at all; for the foetus after the end of four or five weeks is as large as a blue fly. According to Dr. Haighton, if the fallopian tubes of the rabbit be divided within the first twenty or thirty hours after impregnation, the rudiments are prevented from passing into the uterus, from which he infers that the descent does not take place before forty-eight hours. After the disruption of the

vesiculæ de graaf, their situation is occupied by a yellowish material, varying somewhat in hue, and called by anatomists the corpus lutea. In general, you have the disruption of as many vesicles as there are foetuses, but this is not an invariable rule. Much dispute has arisen at different times as to the form in which the rudiments descended into the ovum. By Cruickshank it has been affirmed that they came down into the uterus of an oviform shape; and to prove this, he applied vinegar to the tube after laying it open: but it is not improbable that this would give them a regular form foreign to them in their natural state: and according to Haighton, (and he performed numerous experiments to prove this subject,) they do not put on any regular form, but come down loose without any membranes whatever, and in an amorphous state; and I think that the smallness of the tube fully bears him out in this assertion.

LECTURE XXXIX.

The progress of Conception—If you examine the uterus of the rabbit three or four days after impregnation, you find in each uterus three or four patches of mucus corresponding with the vesicles given away in the ovaria. Very shortly after this, if you examine another rabbit, you find the patches putting on an oviform appearance, and a membrane is produced in which they are enclosed. In a few days more this oviform mass divides into two portions, namely, the waters and the ovum, this last appearing like a dark speck. In the human ovum from

this dark speck a small filament is given off as fine as a hair—this being the future chord. As the embryo grows it resembles the cheese maggot, having neither arms nor legs; when somewhat older, at the inferior extremity you find situated laterally two light brown specks—the future eyes. When still older, just above this you have a contracted part—the future neck. During the first three weeks, the brain, spinal marrow, heart vessels, and eyes are formed. Very shortly after this, the superior and inferior extremities begin to bud, but as yet no hands or feet are formed, but these are produced very shortly after. The placenta is very early formed, and in the first fortnight the chorion and amnion, the amnion being formed rather first. The greater part of our structure is formed during the first three or four weeks, and by the end of the fifth the parts are completed and perfect. Monstrosities are occasionally met with, but of the cause giving rise to them we are at present ignorant. It seems to be from some morbid operation of the forming powers, but of these forming powers we are also ignorant: much seems to depend upon the imagination of the mother. Numerous instances seem to prove this, as from the mother being frightened by beggars without arms, by persons with hare-lip—the child has been born with the disarrangement of those parts. Again, you meet with marks upon the foetus resembling bunches of grapes and various other things the mother may have longed after during pregnancy, numerous cases of which might be enumerated. The cat also is known to produce monstrosities; and these may also be formed under the egg shell. In this last case, however, no mental impression could be supposed to operate; but should we ever become possessed of the laws govern-

ing formation, the cause producing these varieties will be better known. It was the opinion of Spallanzani and others that all the parts of the fœtus were formed in the ovaria, and impregnation was only necessary to bring the fœtus into existence; that all the men, women, and children yet born, and yet to be, existed in miniature in our first parent; that the shoals of fishes, the myriads of birds, are old as, and coeval with the creation, though passing through the door of life. But we have proofs against this opinion of Spallanzani, for we know that the lizard can reproduce its eyes, the crab its claws, the snail its head, and this more than once. Now it cannot be supposed for a moment that these animals were originally formed with several parts of the same kind. Another proof is, that in the impregnation of the ass by the horse, a horse or an ass is not produced, as ought to be the case if the opinions above quoted were correct, but a mule, an animal differing from either. All we know of the matter is, that there is in generation a forming power capable of converting the semen of the male and female into a fœtus, but why this mixture of the male and female semen should exert the forming power, we are ignorant. I have no doubt the process is very simple, although it is at present as strange to us as if you were to tell an American savage that by means of a small quantity of powder you could split the granite rock, that you could cork lightning in a bottle, that you could sail on the air, that you could, by means of a small press, increase and multiply a book in the short space of twenty-four hours to the number of twenty thousand, all equally alike in their characters, beauties, and errors. He will disbelieve you—it will seem to him incredible; but show him the method of doing these things, and they will be no

longer so, being satisfied that he can now easily do the same himself, it being so simple ; so, if our Creator were to show us the means he employed, I do not doubt, but, although at present beyond our comprehension, it would be both simple and easy.

On Impregnation.—Different physiologists have entertained different opinions whereby they have endeavoured to explain the process of generation. Some have endeavoured to explain it by an aura seminalis; others again, as Blumenbach, have asserted it to be produced by a peculiar principle, called by him the *nisus formativus*. From experiments made by myself on the rabbit, I think I have proved that in those animals, and probably in all animals of their structure, not improbable in all living bodies generally, that for impregnation to take place the semen and the rudiments must come in contact with each other. The rabbit is furnished with two wombs, which are invaginated, and about the length of the little finger, and open into one large and capacious vagina by two distinct mouths. One of the experiments consisted in making an opening above the symphysis pubis, about half an inch in length, and after compressing the bladder into the pelvis in drawing out the head of the vagina, together with both wombs, through the opening. This done, I then cut clean through one of the wombs near its mouth, carrying the incision a little way into its substance. The womb thus divided separated, moved out of apposition, and afterwards healed in such a manner that opposite this division the canal of the uterus became completely closed, although in other particulars healthy enough. In some cases the animals died from abdominal inflammation, but by far the greater number recovered, and afterwards admitted the male. On after-examination the

womb, not operated upon became thicker, enlarged, and contained fœtuses : the ovary of the same side contained corpora lutea, but in the other womb no fœtuses were formed, but not unfrequently the womb enlarged and contained water : corpora lutea were also formed in the ovary, clearly proving the effects of the generative process to be ineffectual, because the access between the semen and rudiments was prevented. In another set of experiments I made an opening above the symphysis as before, and drew out both uteri, but instead of dividing them I severed the vagina across, about half an inch from the mouths of the wombs. Some of these animals also died, for they are of very tender structure, but many recovered and admitted the male—in one case as many as fifty times, at intervals of two or three days ; but after death, notwithstanding all these attempts, and although the male fluid had been evidently deposited in large quantity in the vagina, and absorbed by the veins and lymphatics, no fœtuses were formed, clearly proving that absorption of the semen from the vagina by means of the lymphatics is insufficient for the purposes of formation ; yet corpora lutea were generated, the wombs were enlarged, as in extra uterine pregnancy, and filled with water—the efforts at generation evidently powerfully made, yet the access between the male semen and female rudiments being intercepted, no formation occurred. It might be urged that the injury inflicted on the parts was the cause of sterility, and not the intercepted access between the semen and the rudiments ; but I once divided one of the wombs of the rabbit in two, and the other in three places, so as not to prevent the divided surfaces healing in apposition, and here the animal became pregnant after the first intercourse. Also let it be remembered that

when the semen was prevented access to the rudiments the wombs were left untouched, and that the efforts at formation were evidently very strong, as corpora lutea, the enlargement of the wombs, and the accumulation of water in its cavity, clearly proved. Further, it so happened that in two of these vaginal experiments reunion of the parts took place, so that a communication was formed between the wombs and vagina about the size of a crow quill, and in these two cases the animals became pregnant.

From these experiments, multiplied and varied in circumstances, yet invariably the same in result, it is that I feel convinced, that at least in rabbits, if not all animals, contact between the male and female rudiments must take place in order that generation be accomplished. These experiments also prove, at least to me, that corpora lutea may form independently of impregnation under strong excitement of the generative organs; and I have also a preparation of the ovaria, taken from a girl under seventeen years of age, who died of chorea, in which the hymen was unbroken and nearly blocking up the vagina; yet these ovaria contained four corpora lutea, two very distinct, with two others rather obscure. In women with pelvises so contracted that death is the result of impregnation, *sterility* might be induced by cutting down and taking away a portion of the fallopian tubes; this, although in itself an operation not unattended with danger, secures to the patient perfect safety against all future hazard of impregnation. In human formation, the deeper the male semen is deposited in the vagina, the more it conduces to impregnation; yet I have known cases in which the semen was deposited on the vulva, and yet impregna-

tion occurred, and as I suppose from admixture with the secretion of the female, for dilution does not destroy the fecundating principle. Spallanzani found that impregnation took place in the egg of the frog by being touched with a single drop, when the male semen was diluted with three thousand times its bulk of water. Again, impregnation is known to have happened, the vaginal orifice not being wider than to admit the little finger, and the hymen remaining unbroken. Four such cases I have seen myself.

The cause of extra uterine gestation I conceive to be from the overaction of the genitals carrying the male semen too far; although I believe the mixture between the semen and rudiments generally takes place in the uterus. Yet in these cases it must be allowed this does not occur.

Women in general produce but one foetus at a birth; yet the prolific energy of the genital system is various. It is not uncommon for twins to be produced; occasionally triplets, and sometimes, though rare, four or five at one birth.

Sterility in general I believe depends upon defect of the genital apparatus; yet their occasional remarkable fecundity must be ascribed, as is often the case, to the male. When Dr. Rigby was nearly 80 years of age, his lady produced him four children at a birth: the Corporation of Norwich, to commemorate his felicity on this occasion, presented him with a piece of plate, which I think was rather due to the lady. Her sister also was nearly as prolific, she having produced three at one time. Again, a lady related to a late pupil of mine produced four children at a birth; and her own sisters, of whom had three, produced their husbands either twins or triplets; fully proving that

fecundity resided with the female, and of this circumstance you can avail yourselves in choosing your brides.

Suckling is no certain preventive of impregnation, yet during the first months wet nurses seldom become pregnant. After impregnation occurs, the milk is dried up in a few months. *Superfætation*, or a second impregnation, cannot, I believe, occur, except after a short interval. Women have been known to produce twins, one black, and the other white—proving different parents. Bitches also are impregnated by different dogs—but if the time elapsed be long, women cannot conceive a second time, without, as sometimes happens, they have a double uterus.

LECTURE XL.

On the Diseases of Gestation.—Women, when pregnant, become subject to various diseases. During the first months they are occasionally troubled with *sickness* and *retching*, more particularly on rising from bed in the morning. If not very violent, the effervescing draught may be given every half hour for seven times, and in general it will cure the disease. You must, however, order it as I have directed, for the first two or three doses may be rejected, and the patient disposed on that account to leave it off as useless. In some cases bleeding from the arm to the extent of five or six ounces will be found beneficial; the tincture of

opium applied externally to the stomach by means of lint may be sometimes attended with advantage. Blisters to the scrobiculus cordis will often relieve. If the sickness be from offensive smells, as from the neighbourhood of a gas-house or factory, a removal will be necessary. In general the disease goes off about the fourth month of gestation.

Dispepsia occasionally occurs in pregnant women, to be treated as in ordinary cases, but the more severe purgatives ought to be avoided, for they are apt (more particularly if the woman be pre-disposed) to produce miscarriage. Emetics ought not to be given without real necessity, and then the mildest kind. Camomile tea, or the pulvis ipecacuanha, may be used, as they are not apt to occasion any straining. In the administration of blue pill or other mercurials, should they be deemed necessary, always proceed with caution, for in some peculiar constitutions severe salivation may follow after taking only two or three grains of calomel.

Heartburn.—Pregnant women are often greatly distressed by this disease. You have great heat and acidity, accompanied with violent pain and a sensation of weight at the pit of the stomach. Vomitings occasionally occur, or eructations, inflaming and excoriating the back part of the fauces, with pains often shooting from the stomach to the shoulder-blades. Mild emetics and gentle purgatives may be given, should the disease be severe; but if in its mild form, the antacids may be administered, being guided in your choice according to the state of the bowels. Chalk, carbonate of soda, magnesia, carbonate of ammonia, any of these may be tried; or the following mixture, which I have often found highly beneficial:—

R. Magnesiae ustæ, ʒi.

Aquæ ammoniæ fort: ʒi.

— cinnamomi, ʒiii.

— distillatæ, ʒvss. Misce.

One or two tablespoonfuls may be taken three or four times a day, or at any time, should the symptoms be distressing.

Fastidious Tastes.—Pregnant women are often assailed with loathings of various kinds of food;—tea, sugar, milk, butter, wine, &c. become the object of aversion; but very frequently they have longings for various things not cared about previously. These fastidious tastes are also observed in some animals;—the rabbit, a perfect vegetable feeder, always eats the placenta, and sometimes its young, from, I suppose, its fondness for the first morsel. These likes and dislikes of pregnant women are analogous to this; and without the subject of their wishes be hurtful to them, I think they ought to be indulged.

Constipation.—In the early and latter months of gestation the bowels are apt to become loaded, giving rise to unpleasant sensations, and often injuring the health. To obviate this, rhubarb, castor oil, manna, or the confection of senna, should be given so as to act once freely on the bowels every twenty-four hours. During the few latter weeks more than usual care is required, for loaded bowels may obstruct delivery, besides causing other inconveniences.

Prolapsus Uteri.—A bearing down, as if something was going to drop from the body, attended with severe pain, more particularly about the sacrum and front of the abdomen, accompanied sometimes with mucous discharge, aggravated towards evening, but much relieved in the morning, are the symptoms of this disease. The horizontal posture, either on the bed or a

sofa, for two or three weeks, so as to give time for the uterus to rise above the brim, will generally cure the disease. Occasionally, however, the uterus, instead of rising above the brim, remains, and grows in the pelvis, giving rise to tenesmus, retention of urine, and other troublesome symptoms, by its pressure on the rectum and bladder. The bladder must be emptied with a flat catheter—for sometimes two or three pints of urine accumulate—then push the uterus above the brim, and keep the woman a week or two in the horizontal position, and, from the increased size of the womb, when once replaced, it has little tendency to descend.

Micturition is not uncommon in the early and middle months of pregnancy, arising generally from the uterus pressing on the bladder, or from an irritability of the parts. Bleeding from the arm, to the extent of six or eight ounces, leeches above the symphysis pubis, fomentations, the horizontal position, and diluent drinks, will generally cure the disease.

Calculi occasionally (though rarely) form in the bladder; and as, if large, they might obstruct delivery, and, by the pressure of the bladder between the stone and child's head, cause slough, their extraction, therefore, is highly desirable—generally to be effected by dilatation of the urethra, for, without the stone be very large, lithotomy is rarely required in women.

Jaundice occurs sometimes in the middle months of pregnancy: it may be from the usual obstructions,—if so, the usual treatment; but generally I believe it is from the uterus pressing some part of the viscera against the gall ducts. It may disappear spontaneously in the latter months, from the uterus shifting its bearing and rising higher. If it does not disappear at this

time, it will at the end of gestation. Use palliative remedies, mild purgatives, &c.

Dyspnœa is occasionally a troublesome attendant on pregnancy : it often comes on with great regularity at night, so that the patient is obliged to walk about the room, not being able to keep in the horizontal position, from the feeling of suffocation it occasions. This disease is not unfrequently connected with acidity of the stomach, or irritability of the nervous system. Opium, hyocyamus, conium, musk, æther, valerian, seem to be the remedies most adapted for this disease. Should the disease come on with regularity night after night, the quinine, in large doses, given during the day, will, I think, be found very effectual.

Coughs from pregnancy differ from the common catarrh in being far more severe, and also attended with pain and great afflux of blood to the head. Bleed moderately, say to the extent of five or eight ounces ; give mild purgatives, to regulate the bowels ; and allay the cough by antispasmodic and soothing remedies. The paregoric elixir, given in drachm doses two or three times a day, will be found to give great relief.

Convulsions.—If, with violent pain in the head, you have flushings of the face, throbbings of the carotids, and affection of the retina, we must suspect convulsions to be at hand. Bleeding rather largely from the arm, leeches or cupping at the nape of the neck, purging, and the warm bath will be found the most effectual remedies. If the symptoms arise from derangement of the stomach, then give the dispeptic remedies.

Tooth-ache is often a painful attendant during gestation : sometimes all the teeth on one side the jaw are affected ; and if on examination you find one hollow, I would not advise you to extract it, for it is very probably not the cause of the pain, but is rather to be re-

ferred to some irritability of the nervous system which pregnancy produces. The disease often comes on at night, depriving the patient of all chance of sleep. The bark, in the form of powder, to the extent of a drachm, or a proportionate dose of quinine, may be given three times a day; the arsenical solution, should the bark fail, may be tried; or, should these means fail, the neuralgic remedies, as the carbonate of iron, must be given—three or four scruples is a fair daily dose.

Salivation occasionally occurs during gestation, and that without the smallest quantity of mercury having been taken—differing, however, from mercurial salivation in not being attended with foetor of the breath nor ulceration of the gums—merely a very copious discharge of the saliva. If the discharge be sparing, the less the patient spits the better—give mild purgatives and tonics; if severe, and the strength of the patient becomes very much reduced, then I know of no remedy but delivery—bring on premature parturition.

Women, during gestation, are not unfrequently affected with *swelling of the lower limbs*, and occasionally of the labia. If the swelling be slight, lying on the sofa and a bandage, or the laced stocking, will be all that is required. If severe, bleeding and purging must be combined with the bandaging of the limb: acupuncture may also be useful occasionally.

Dropsy of the Ovum.—Instead of the usual collection of liquor amnii, we occasionally meet with cases in which there is an accumulation of from two to three gallons, known by the rapidity with which the abdomen enlarges—by the distinct fluctuation—by the pain it produces from the too quick distention of the uterus. Examination at once determines the disease; you find the membranes protruding, and the os uteri partly open. This disease generally cures itself by

bursting the membranes, discharging the accumulated water and bringing on premature parturition. Should the natural efforts fail to relieve in this manner, then give opium and apply fomentations to the abdomen ; but should the pain and other symptoms continue urgent, take a blunt pointed female sound and puncture the membranes.

LECTURE XLI.

Pregnant women are liable to *varicosity of the veins*, and the lower extremity combined with *œdema*, and often attended with *cramps*. If not severe, the laced stocking and purging will be found the best palliatives, and the cure is completed by delivery. Cramps in the limbs often come on at night. In these cases you should attend to the head, for these cramps may be the precursors of convulsions, and if you observe symptoms threatening an attack of this kind, bleed largely ; give the senna and salts, with other remedies previously mentioned. *Rigidity of the abdominal coverings* happens more frequently in the first pregnancy, and is caused by the rapid growth of uterus distending the abdominal coverings, causing considerable pain about the insertion of the abdominal muscles. To relieve this, blood may be taken from the arm, the abdomen carefully fomented, and leeches may also be applied to remove any inflammatory action.

Flaccidity of the Abdominal Coverings occasionally occurs from these coverings not returning after delivery to their original state, and the uterus when the

woman again becomes pregnant, falls to one or other side of the abdomen. Lying on a sofa and supporting the abdomen by means of a bandage or stays well applied, will be found to afford the most effectual relief. Women sometimes suffer from the *violent motions of the child*. The child kicks, cuffs, and seems as if it would burst through the abdominal coverings, probably from convulsions. If the foetal disturbance is not violent, the woman seldom complains much of it, but it sometimes causes violent agitation and alarm, almost amounting to delirium, attended with very severe pains. Here you must take away blood from the arm, say to the extent of ten or fourteen ounces; give opium, conium, or the hyocyamus. Opium, I believe, answers best; also get a person to hold the child still by pressing on the uterus through the abdominal coverings with both hands. If these means fail, then rupture the membranes and bring on premature parturition. In a very marked case of this kind which I saw some short time ago, the child, when born, was very weakly, and died in a few hours from convulsions; and this is my reason for suspecting the turbulence of the child to be from this cause.

Women may have *vomitings and purgings* both in the middle and latter months of pregnancy, giving rise to much distress, and often attended with danger; in general, however, they recover, although often greatly reduced; occasionally, however, they die from syncope, or should the patients have light flooding, it is highly probable it may conduce to the same termination. If the alimentary canal wants clearing out, do so by mild laxatives combined with anodynes, as the castor oil with the tincture of opium. If the stomach be in fault, a mild emetic may be given, as the ipecacuanha, warm water, or chamomile tea.

In general, however, such treatment is not required, the principal point being to diminish the discharge from the bowels—opium, confection of opium, aromatic confection, chalk mixture, kino, catechu, hematoxylon, may each be given according to their effects. If the large bowels are affected, then mucilaginous injections may be used ; should you have vomiting, the effervescing draught must be given every two or three hours, and tincture of opium applied by means of a dossil of lint to the pit of the stomach ; or blisters, leeches, cupping, or sinapisms. If the effervescing draught fail, then strong coffee with milk, but without sugar, may be tried. Opium seems more beneficial externally than when administered internally either by the stomach or rectum. It may be applied by means of muslin or lint dipped in it and kept constantly wet and covered over with oiled silk to prevent the too rapid evaporation. Charcoal in fine powder has been highly recommended ; you may try it, but I will not pledge myself as to its efficacy ; *Opil* may be given every half hour for four or five times.

Irritability of the alimentary canal caused by an erythematous inflammation of the mucous membrane, known by the redness of the mouth and tongue—by the rise of the pulse, often 120 or more in the minute—by great irritability of the rectum, its contents often being ejected with great violence ; and by great tenderness of the abdomen. You have often thrush in the mouth : if the woman be much debilitated you must employ soothing remedies, as those just described. But if you are called to the case in its first commencement, the antiphlogistic plan of treatment must be adopted ; as bleeding, cupping, blisters, &c. Sometimes the stomach rejects every kind of food : if so, and your remedies fail to sooth, don't tease the pa-

tient by giving food—let her lie quiet, and in these cases the bowels will often be stayed ; at the same time, if nourishment be necessary, injections of eggs, broth, &c. may be used. Six ounces of any nutritive fluid may be thrown up five or six times a day, and the patient may in this manner be nourished several weeks. A patient of Dr. Hulls, of Manchester, was nourished three weeks in this manner ; and a case is related by Hildanus, in which the patient rejected all food taken into the stomach for the space of five weeks, but was well supported by this method ; the infant was also born alive and well. This disease often ceases on delivery ; and this being observed, it has been advised in these cases to bring on premature parturition ; but I would advise you to try to delay this operation if you can with safety to the mother, till the seventh month, or seven months and a fortnight, for then the child may live ; and delivery in these cases is not without its dangers : for if only attended with slight flooding, the woman might sink, if already much debilitated by the disease. The foetus too is often lying preternatural, which may make the delivery difficult ; so that all these things must be thought of before bringing on parturition. Knowing these dangers, you will not have recourse to this means of relief unnecessarily ; yet you must not allow the more urgent danger of the patient to go on, when you can by this method put an end to it. If your patient can take food, it had better be given in the solid form ; for in this state it occupies but little room. Or again—in some cases food may be retained one part of the day, although not at another ; knowing this, you wait until the stomach is quiet, and then give food say two or three spoonfuls of milk, not more, for it may be the too large quantity of the food previously taken which had offended the

stomach and caused its rejection. Women, more particularly during the first pregnancy, are liable to rapid development of the *breasts*, producing considerable pain and uneasiness, occasionally amounting almost to inflammatory action. Small bleedings, leeches, fomentations, poultices, friction with camphorated oil and tincture of opium, and, above all, patience, are the best remedies for this disease.

Syphilis, accompanying gestation, is not a very common disease, more particularly in the middle and upper ranks of life. In the lower and more numerous orders it now and then occurs. If possible, should the woman be predisposed to miscarriage, you will do well not to give mercury, at least in large doses, but delay its fuller action until the child is seven months, or seven months and a fortnight, for then the child can support life independently of the mother. Mercury may be given in small doses to prevent the disease from increasing, till the seventh or eighth month, and then it may be given with more boldness. Should, however, the danger of the mother demand it, mercury must be given in sufficient quantity to cure the disease, let what will happen to the child. If the woman be in robust health, and not disposed to miscarriage, I would recommend mercury, if given at all, to be given in sufficient quantity, to cure the disease: should, however, the woman be weakly, and more particularly if she had aborted before, I should feel disposed to give the mercury in smaller doses, so as to suspend the action of the disease till after the period of gestation. The milder preparations of mercury may be given, as the blue pill or the hydrargarum cum cretâ, so as to affect the mouth, which may be kept sore for five or six weeks. Soreness of the mouth is far preferable to a high state of

salivation, as being much less likely to produce abortion. Nitric acid has been recommended in these cases. It has been said that it would cure the disease ; this, however, is not found to be the case. It certainly does seem to suspend the symptoms for a time, and may be tried in cases where mercury might produce abortion, till the end of gestation ; when you may then with safety cure the disease by more powerful remedies. The lunar caustic is sometimes used as a palliative ; it stops the progress of the shancre, and often cures it—but the constitution remains affected. Yet in weakly constitutions it is of primary importance to gain time : and in these cases, if, by its use you can procrastinate the use of mercury till the end of gestation, or at least till the end of seven months, or seven months and a fortnight, it becomes a most useful auxilliary.

LECTURE XLII.

On the Signs of Pregnancy.—The signs indicating pregnancy may be divided into three varieties—the ordinary, the extraordinary, and the manual. In the ordinary signs you find, on inquiry, irritation of the bladder and rectum, and often œdema of the lower limbs : these, although not positive proofs, are at least very suspicious signs of pregnancy. If the stomach be affected with morning sickness, the woman throwing up nothing but gastric juice mixed with saliva, this (more particularly should she have been affected in a former pregnancy) forms a very good sign of pregnancy. The motions of the child, by

reason of its smallness, are not felt in the early months; but about the fourth month of gestation it becomes large and strong, and its motions are sometimes very perceptible. In general we lie very still during gestation, showing little of that restless disposition that characterises some of us in after life; yet, as it is among men, so it is occasionally among fœtuses. In some cases the child is very turbulent throughout gestation, and on laying the hand on the abdomen you feel it kicking and struggling, and now and then it may be seen moving through the abdominal coverings, forming a very good sign of pregnancy. If, however, the movements of the fœtus are not strongly marked, it is not a good sign; for flutters of the bowels and spasms of the abdominal muscles may be mistaken for them, and that by the woman herself, although she may have had several children previously. The motions of the child may be simulated by women by the actions of the abdominal muscles so exactly resembling the motions of the child, that without you are cautious it is very possible for you to be deceived by them. A woman, for hire, seen by the late Dr. Lowder and other eminent accoucheurs, simulated these movements so exactly, that, had they judged from this sign alone, they would have pronounced her pregnant. If, therefore, you should suspect a woman is practising this deceit upon you, take no notice of what she says, nor of the movements of the belly, but judge from the other signs.

The abdomen enlarges very much in pregnant women, more particularly towards the latter months, and constitutes a good sign of pregnancy: it may, however, be produced by other means, as by water, air, fat, ovarian tumours, &c.; but by observing the form of the abdomen, by learning the length of time since

the swelling began, by feeling the abdomen. If from air, the swelling is very elastic, and may be compressed and urged from one part of the abdomen to the other ; if pregnancy, it is firm and unyielding, and occasionally you may feel the different parts of the child. Tympanites of the intestines may continue for weeks, but it is very fugacious, and may vanish in a very short time. In dropsy you have undulation on striking the abdomen with the finger ; but without from distended bladder or dropsy of the ovum, no fluctuation can be felt in pregnancy. The accumulation of fat is not topical, but is diffused over the whole body—the haunches, face, breasts, and limbs more especially. If the abdomen be gradually enlarging, by getting the patient to measure herself from time to time with a tape, you may readily judge, by the age and increase of the swelling, whether it be from pregnancy or not : if from ovarian tumours, the progress will be very slow.

The next sign is taken from the enlargement of the *mammæ*. Sometimes you have a secretion of milk or serum, which can be pressed out of the nipple : the breasts, too, are frequently very irritable and tender. These together form one of the signs, but only in first pregnancy. The breasts may enlarge after marriage without pregnancy, but it is only in proportion with the other parts of the body, and is easily distinguished from the enlargement of the breasts from pregnancy. Tenderness of the breasts is not so sure a sign ; for, from handling the breasts, they may become very tender—nay, this may even give rise to secretion. Secretion of milk must not be taken as a sign, except in the first pregnancy ; for milk may continue in the breasts for a number of years, several cases of which I have seen. Another sign is taken

from the change in the colour of the aureola surrounding the nipple: in the virgin state it is of a rosy tint, or of a lighter shade; but from pregnancy it becomes of a much darker hue, and is either of a coppery or dark mahogany colour. It is in the first pregnancy only that this is a good sign. The colouring matter is contained in the *retæ mucosum*.

The suppression of the menstrual discharge, if previously regular, is a good sign, and the one by which women judge whether they are in a state of pregnancy or not; yet this discharge may be suppressed from other causes, as cold, &c., or it may continue to flow the first three or four months although gestation is going forward,—in rare cases perhaps all through gestation,—or the woman may have slight floodings. If the woman be pregnant, and the catamenia flows regularly it is generally less in quantity, and continues a shorter space of time. At the age of forty-two, or thereabouts, this discharge ceases; and at this time the abdomen sometimes becomes greatly distended with air, and the breasts are irritable and uneasy; so that, should a woman married late in life, and perhaps wishing to have children, have the discharge cease, the breasts swell, and the abdomen enlarging, she may fancy herself pregnant; and here you must be very careful, or you may be deceived.

The extraordinary or anomalous signs are not so frequent as those just mentioned, yet sufficiently important to demand consideration. Pregnant women sometimes form a dislike to tea, sugar, milk, butter, wine, &c.—articles of which they were fond before; and if this has been observed in a previous gestation, it forms a very good sign. In some cases you have great emaciation of the body during pregnancy; the woman, previously healthy, becomes wasted, the breast

and abdomen excepted; these go on enlarging, constituting a good sign of pregnancy. Again—you have occasionally, during gestation, great irritability of the nervous system; the disposition, previously mild, becomes irritable and morose; this forms a good though unwelcome sign. Some animals seem affected in the same manner. The rabbit, as the period of gestation closes, acquires increased ferocity, and is sometimes guilty of devouring its young. With dreaming and frightful visions women are occasionally assailed during gestation; so much so in some cases, that nurses have been employed to watch the countenance of the patient whilst they sleep, for the purpose of waking should the disturbed state of the countenance indicate these visions were distressing the patient. This is often from an increased flow of blood to the head; and cupping at the nape of the neck, bleeding from the arm, and purgatives may be required. Again, you may have pains in various parts of the body, as the fingers, toes, more particularly the teeth; also about the latter end of the third, or in the fourth month, you have the sensation of quickening, a feeling of motion in the abdomen, with perturbation of mind, sickness, and fainting, forming a valuable sign of pregnancy. The blood, when drawn, may give you some idea, for during gestation it is always more or less sily; this, when joined with other indications, forms a good sign of pregnancy.

The *third class, or manual examination*, may be divided into two kinds, namely, examination in the early, and examination in the latter months; when you wish to examine in the latter months, you must place your patient in the best position for relaxing the abdominal muscles, and the bladder must be emptied either by the natural efforts or the catheter; these preliminaries concluded, you lay your hand

upon the abdomen, when, if pregnant, you find it enlarged; and on pressure you feel the uterus hard, round and smooth, and in some cases the motions of the child. These movements of the foetus may occasionally be brought on by suddenly applying the cold hand to the abdomen, and also from causing the woman to vary her position; this performed, you now place the woman in the usual position for internal examination, and having lubricated one or two fingers of the left hand, you carry them to the mouth of the womb, and in some cases, more particularly if towards the close of gestation, this is sufficiently expanded to enable you to feel the membranes, and also the child's head: remember however that in these internal examinations you use no force, else you may bring on premature delivery. Having satisfied yourself on this point, you now place your fingers between the symphysis pubis and the os uteri, making counter pressure above the pubes, when, if pregnancy exist, you may feel the head of the child round and hard, and in some cases the sutures may be distinguished. Lastly, by lifting up the child's head with the fingers, and letting it fall again, you find if pregnancy exist. In these cases of suspected pregnancy in the latter months, provided the foetus be alive, the stethoscope forms a valuable addition to your other signs, by enabling you to distinguish the pulsations of the foetal heart. In the early months you endeavour to ascertain if pregnancy exist by internal examination. Having carefully emptied the bladder, place the woman on her left side; you introduce the two fore fingers of the left hand into the vagina; also place two or three fingers of the right on the abdomen, and if the woman be not unusually fat, you will readily find whether the uterus be enlarged or not. Secondly, by

passing your two fingers to the os uteri, and moving the womb in different directions, you learn whether it be enlarged or not. If not enlarged, it is moved with great difficulty, but as its size increases it becomes more moveable. Thirdly, by placing the thumb and fore finger of the left hand in both the vagina and rectum, and pressing above the symphysis pubis with the right, you readily find if the womb be increased in size. But to be certain before giving your opinion, you had better mark the size of the womb, and make a second examination in about a month after, and if it be increased in size, it is most likely from pregnancy, of the diseases of the uterus, as schirrus, polypus, or hydatids, are rare.

Examinations are of no use before the third month. The period of human gestation is thirty-nine weeks plus one day, or nine calendar months. Some women, from peculiar feelings a few hours after intercourse, can tell when impregnation is accomplished. Some reckon from the cessation of the catamenia, reckoning nine months, and adding a fortnight. Others again from the time of quickening, reckoning five months after this period. If you calculate as the Mahometans do, by the lunar month, the time is longer.

LECTURE XLIII.

On Retroversion of the Uterus.—Having concluded the diseases, together with the symptoms, of pregnancy, we now have to speak of the diseases of the unimpregnated genitals. In retroversion the uterus becomes changed from its natural position, and in-

stead of being placed with its fundus forwards, and its mouth facing backwards and towards the middle of the sacrum, the fundus may fall downwards and backwards, and the mouth face upwards. This position, should the pelvis be small, or the womb itself naturally large, may give rise to great irritation of the rectum and bladder: this becomes the case more particularly when the uterus is enlarged in size, as from pregnancy, schirrus, polypus, or moles. The bladder and urethra in particular suffer—the pressure may be so great as to cause difficulty in passing the catheter—and, should the case be mistaken or neglected, lead to disruption of the bladder, extravasation of the urine, and dangerous, if not fatal, inflammation of the neighbouring parts. The womb may continue to increase while retroverted, making great and constant pressure on all the parts within the pelvis, giving rise to great irritation and derangement of function. The uterus is also liable to be displaced with its fundus upwards and mouth directly downwards, or it may protrude externally. There are two varieties of this disease—the first highly dangerous, and occurring during pregnancy; the second less dangerous, and unconnected with pregnancy. The first variety generally occurs about the third or fourth month of gestation. It may be caused by restraint, as at a ball, or other situation preventing the proper evacuation of the bladder: the loaded bladder pressing on the uterus behind produces the retroversion. Or, in rare cases, it may arise from the overaction of the abdominal muscles themselves, as from coughing, laughing, or from stumbling and making strong efforts to avoid falling; but this is far more likely to happen if joined with distended bladder. Lastly, it is said that retroversion may be produced from enlargement of the

ovaries, from dropsy, or schirrus. A lady labouring under ovarian dropsy, in taking the air in an open carriage for the benefit of her health, was, in one of her excursions, overturned and thrown out with great violence, the abdomen falling on a large stone by the road-side : on her return home she suffered much for a few days from abdominal pain, the kidneys at the same time secreting a large quantity of water ; but when these symptoms subsided, the dropsy was gone. Having entered the marriage state some time after this, she became pregnant, and died from irreducible retroversion of the womb. On examination it was found that, from the previous fall, the ovarian syst had been ruptured, the water discharged into the peritoneal cavity, and afterwards absorbed and excreted by the kidneys ; but the ruptured syst having fallen on the womb, carried it down below the promontory of the sacrum, causing it to become retroverted, and afterwards fixed by inflammatory adhesion—and by the enlarged womb, thus fixed, pressing on the neighbouring parts, death ensued.

On being called to a case of retroversion of the womb, you generally find the patient has been placed under restraint—the efforts to evacuate the bladder, when opportunity offered, failed—not a drop of urine would flow : she now complains of great pain in the hips and back, somewhat resembling those of parturition, and she may tell you the urine is either wholly retained or (what is more common) that it keeps constantly dribbling away—leading you to suppose it to be, if unguarded, a case of incontinence of urine. On examining the abdomen you find it enlarged and giving to the feel an evident fluctuation, from the enlarged bladder : perhaps the secretion is of days' continuance. Should the woman happen to labour under

œdema of the lower limbs—common during gestation—you may (should the accumulation in the bladder be large) suppose it to be a case of ascites, and propose the operation of tapping. In a case of this kind the operation of tapping had been proposed by the attending practitioner; but there being some doubt on the case from the central pain, &c., an accoucheur was sent for, who introduced a catheter, and drew off seven quarts of urine, which had been accumulating in the bladder two or three weeks, from the pressure of the retroverted womb. Beware, therefore, of letting the case deceive you—beware of allowing the bladder to become distended, although there may be a constant dribbling; for, disruption of its coats and fatal inflammation may follow this neglect. But the central pain, the bearing down, the retention of urine, and flattening of the fæces, are merely suspicious symptoms of the case: indeed it is by internal examination alone that the disease can be detected. On examining the abdomen you find a hard, round, and fluctuating tumour, from the distended bladder; and on internal examination you feel a large tumour, with the vagina in front and the rectum behind, the os uteri lying very high up and forward, or out of reach altogether: when the bladder is emptied you may feel above the pubes for the fundus of the womb, when, if not felt, you may lift the tumour with the other hand, and if you then feel the fundus, it becomes a further indication of the displacement. It has been asserted that retroversion of the womb might be known by the situation of its mouth: I confess it to be a very excellent sign; yet it is liable occasionally to error, for the neck of the womb may be very flexible, and the body of the womb bent backwards towards the sacrum, yet the mouth retain its proper position. Again, if the ovary be enlarged,

it may bear on the uterus, and tilt it so as to produce retroversion of the womb of the common kind. From these, therefore, it is that I would advise you not to form an opinion from one symptom, but from all taken together.

Treatment.—Empty the bladder by the catheter, for as I have before told you, it may be enormously distended : when the bladder is thus relieved there is plenty of space for the replacement of the womb. Having placed your patient on her left side close to the edge of the bed, you introduce your four fingers, say of the right hand, and by bearing on the back part of the vagina and pressing upwards you generally succeed in pushing the womb above the brim of the pelvis ; never operate without emptying the bladder, for you either will not succeed, or if you do, ten to one but you burst open the bladder. Should the method first mentioned fail, you may then have recourse to Denman's practice. Keep the bladder empty, introducing the catheter two or three times daily ; allow her to drink but little, and encourage perspiration : the woman must be placed in the bent position, so as to invert the pelvis, leaning on her knees and elbows, and kept there for several hours together, when from the favourable position and the empty bladder, the womb generally returns to its proper situation ; it may take place at once, or not until some hours. If this method fail, allow the urine to again accumulate to the amount of two or three pints, then introduce your catheter, draw off the urine, and place the woman in the inverted position on her knees and elbows, and then passing the fingers into the vagina, you endeavour to press the uterus above the brim ; or secondly, you may pass your fingers into the vagina, and the thumb in the rectum, and thus getting a

double bearing on the part, press it above the brim ; if this fail, the womb is irreducible. If the catheter can be introduced so as to empty the bladder, and the rectum kept in action, leave her to her own powers ; no force must be used, and she may go on to the full term of gestation and do well. But if the bladder cannot be emptied, it either must be relieved by the operation of tapping, or else division of the symphysis pubis, or by bringing on abortion by tapping the womb with a very small trocar and canula, and drawing off the liquor amnii by means of a syringe, and then, if possible, breaking down the ovum.

Merriman relates a case in which a woman with retroversion of the womb went to the full time ; the os uteri dilated, and after many efforts presented, and at last by the most violent efforts was pushed down to its proper situation. Retroversion of the womb may occur after delivery, as in labourious labours, from allowing the bladder to become distended ; but this is less dangerous than the former, as the uterus shrinks and becomes less instead of, as in the former variety, larger. After emptying the bladder, place the woman on her left side and replace it.

The uterus may also be enlarged and retroverted from schirrus, polypi, moles, &c. ; if this should occur, the womb must be replaced according to the rules laid down. The womb, when not enlarged from pregnancy or disease, may occasionally form its large size, produce all the symptoms of retroversion, and must be treated accordingly.

Antiversion.—When the fundus of the uterus is pushed forwards, the mouth at the same time receding backwards, the womb is said to be antiverted ; but I doubt whether this is a disease at all. I have never seen a case of it ; if, however, the fundus is

pressing on the bladder, you must push it upwards. After the reduction of the womb is accomplished, the patient should be kept in bed for two or three weeks: if a disposition of retroversion to return threaten, the patient should be advised to keep the bladder perfectly empty, and to place herself in the bent position, resting on the knees and elbows two or three hours at least daily. If from pregnancy, the quick enlargement of the womb soon prevents its return: you should always watch your patient with great vigilance after the replacement of the womb, for acute inflammation of the bladder may come on, producing great exhaustion, and perhaps death. Again, abortion may follow after replacement, of which I have seen several cases.

Tumours are occasionally formed in the pelvis, variable in size and also situation; those situated between the rectum and bladder form one class, the recto vaginal; any other which are situated differently from these, form a second class. The first is the most common; it may be from enlargement of the ovaries from various causes, as extra uterine pregnancy, dropsy or schirrus, or from descent of the intestines. If the enlargement be from the ovary, and this is somewhat of large size, or the pelvis small, it may cause great irritation of the bladder and rectum; but if small, and the pelvis large, little inconvenience may be felt from the very gradual pressure, till at last it rises above the brim, and gains another bearing; but in the former case from the irritation of the rectum, the patient may be supposed to labour under hæmorrhoids or retention of urine from pressure on the bladder: perhaps too you have central pain about the pelvis and extending down the thighs from pressure on the nerves, and also in some cases paralysis, either

partially or complete, in one or both of the lower limbs. In these cases having a patient labouring under irritation of the rectum and detention of urine, with pain in the pelvis and thighs, together with paralysis, examination ought to be had recourse to, when you will generally find some tumour lodging in the pelvis. Your treatment must consist in pushing the tumour above the brim of the pelvis, if possible, proceeding in the same manner as in retroversion of the womb. If you cannot succeed in your endeavours, cease; palliate the symptoms—keep the bladder empty, and allow the patient that food only which produces but little evacuation. Bleeding and anodynes may be tried if the pain be very severe. After a time these tumours increasing in size, will of themselves rise above the brim, and put an end to all the unpleasant symptoms under which the patient previously laboured. Women labouring under these tumours ought to avoid becoming pregnant. If single, advise the patient to keep so—if married, separation and abstinence from her husband is her best security : should she become pregnant, the high probability is that both she and the fœtus will perish.

LECTURE XLIV.

Women are liable to prolapsus of the different viscera of the pelvis, as the womb, bladder, or vagina ; and either of these, more particularly the womb, may lie forth between the thighs, forming a tumour varying in

size from that of the closed hand up to the foetal head: or the part may descend to and rest upon the perineum, forming a large and round protuberance when the woman urges. In other cases the different viscera—the uterus in particular—merely descends a little, without gaining a bearing on the external parts. The causes giving rise to these descents are various; they may occur when the pelvis is of small size, and the vagina of its natural form; but they occur far more frequently in the large pelvis, and where the vagina is much relaxed, as from floodings, mucous discharges, frequent childbirth, or elongation of the broad ligaments allowing the womb more extent of motion than natural: also if the womb or other viscera have descended before, the patient again becomes liable to the same disease; for, from frequent descents, the parts seem to form and adapt themselves to the change of position. Again, where women have borne large families, you will always find them complain more or less of bearing down, and other symptoms of prolapsus, when they first arise from bed after delivery, more particularly if early occasioned, from the largeness and increased heaviness of the womb and the laxity and distention of the vagina. Polypus or schirrus occasionally give rise to the same disease. Again, under the strong action of the abdominal muscles, as from frequent vomitings, or coughings after delivery, with urging from disease of the bladder or rectum, the same disease may be occasioned. Some women in the lower ranks of life become very liable to prolapsus, as market-women, from carrying large burthens on their heads, washerwomen, from wringing, lifting the clothes, &c. Women, from floodings, and frequent miscarriages from the relaxed state of the parts, become very liable to this disease. Again, in the early months

of gestation, if the woman be of weak health, or have borne many children, or obliged to labour hard, descents of the womb are not unfrequent. This disease more frequently occurs after the age of twenty or five and twenty; but children are not exempt altogether. These descents of the pelvic viscera may be divided into three classes:—the descent of the vagina—of the bladder—of the uterus. The mucous membrane of the vagina may become relaxed and elongated, forming a swelling, small at first, and perhaps little noticed, but at length becomes of greater size; it protrudes and forms a fleshy mass, liable without proper examination to be mistaken for polypus or descent of the womb. If the protrusion be in front, the bladder may descend more or less with it; if posteriorly, the rectum. If the disease be of short continuance, the swelling is small—not larger perhaps than the end of the forefinger, but as it advances the size increases and forms a tumour large as a pullet's egg. If you are called to the case while the disease is in its early stage, without you make your examination with great caution and circumspection—the swelling being of small size, and if the vagina be lax apt to recede before you on the pressure of the finger—may deceive you; you tell the woman she has no swelling—she is certain there is, which she may fancy to be the beginning of some dangerous disease, as cancer. You examine again, and if you use more caution, you easily discover it. You may attempt to cure by the use of astringent injections, as the sulphate of alum, zinc, copper, or infusion of galls, varying in strength according to the effect produced. If inflammation of the parts occur, leeches, fomentations, and poultices, must be used. The horizontal position may also be tried for six or eight weeks after delivery, for in this

position the vagina may contract, and if strictly followed cure the disease. In the later stage of the disease, where the swelling is as large as a pullet's egg, pessaries must be used: the balloon or ball pessary answers best in these cases, or an egg boiled hard may be substituted in some cases.

Prolapsus of the Bladder.—In this disease, like the former, the descent is greater in some cases than in others. It may descend, and carrying the vagina along with it, protrude beyond the genitals—easily made out: you are told the tumour is largest when the patient wants to pass her urine, and that after this is evacuated, it is much reduced in size. On examination you find it soft and pulpy, or elastic, giving to the finger a fluctuating feel like an abscess, and on introducing a catheter, you find it passes into the middle of the swelling. Sometimes the descent is only partial, the swelling being situated behind the symphysis pubis, but not protruding so as to lie out under the eye. When the bladder is full, it forms a large tumour completely blocking up the vagina; on passing a catheter, you distinguish it in the middle of the swelling; this, with pain in the loins, bearing down, and the increase of the swelling from voluntary urging, form excellent diagnostics of the disease. Again, occasionally you have descent of the womb accompanying descent of the bladder, to be made out only by careful and diligent investigation. To distinguish this disease, you must first pass a catheter and empty the bladder, and then on examining you feel beyond the first tumour formed by the bladder another, different in feel, being hard, round, and firm—known to be the uterus by its situation, and more particularly by its mouth: perhaps in the greater descents of the bladder the uterus always descends more or less.

Treatment. In the greater descents of the bladder, the only effectual relief is by the pessary. The balloon-shaped pessary may be introduced in the usual manner, after first emptying the bladder. Or the common ring pessary may be tried, and a belt applied around the loins, with a pad and understrap, passing from behind to before. If the case is not very severe, the bladder merely descending a little, you may attempt to cure the disease by injections, as the decoction of oak bark, green tea, the solutions of alum, or zinc. I prefer the alum, as being less irritating than the zinc. Also by keeping the bladder constantly empty, avoiding all straining, by sending the patient into the country, and improving the general health. If the woman again becomes pregnant, she may try the horizontal position after delivery, as recommended in the preceding case. In these cases the woman is often troubled with tenesmus; you will do well therefore to warn your patient of the danger of urging and forcing. In these cases also, your patient should be taught to pass the catheter for herself, for when once learnt, she can always pass it more easy for herself than you can; and by keeping the bladder empty, you prevent any urging or forcing.

Prolapsus Uteri differs from procidentia uteri in descending only as far as the external parts, or perhaps not more than one or two inches, whereas the former protrudes beyond the genitals. Relaxation differs from this only in degree, the womb not descending much below the brim.

In Procidentia of the Womb, the swelling may be composed of the bladder, vagina, uterus, and perhaps intestines, forming beyond the genitals a tumour large as the foetal head. On examining the tumour, you sometimes discover the rugæ of the vagina; if the

bladder also protrude, you can pass a catheter into its cavity, and in most cases the os uteri can be distinguished, although in some cases the orifice is very small, and may, without you use a probe, be mistaken for a mucous follicle. Having satisfied yourself of the true nature of the tumour, your next object is to reduce the parts as speedily as possible; this is in general easily accomplished by placing the patient in the recumbent position, and after introducing the catheter you get a general bearing on the tumour and press it backward and upward towards the promontory of the sacrum; but occasionally it cannot be reduced without great danger; it contracts adhesions to the lower parts of the pelvis, and its reduction might cause peritoneal inflammation. When the parts are reduced, a balloon pessary must be worn, and a belt and pad to prevent any further descent. Women often lose the advantage to be gained from the use of pessaries; from the inconvenience they at first occasion, they leave them off. More common, the womb alone is protruding, the os uteri being on a level with the external parts, causing aching in the back, loins, hips, and thighs; and a feeling of bearing down as though the contents of the pelvis were dropping out. The bladder is often obstructed from the pressure of the tumour. On examination, you find the vagina about the os uteri filled with mucus: you should examine in the evening, for then the parts are most protruding. If the protrusion of the part be very slight, injection of alum or zinc may be tried. One drachm of the sulphate of alum may be dissolved in a pint of water, so as to form an injection, which must be used six or eight times a day. The strength of this injection may be increased as the parts can bear, till you use four drachms of alum to the pint of water;

should this fail, then the balloon-shaped pessary must be employed. In these cases the health must be attended to, if necessary.

Should inflammation and fever follow the replacement of the womb, you must bleed from the arm, foment the parts, apply poultices, purge, and employ the strictest antiphlogistic plan of treatment. The bladder must be kept empty, and should the symptoms be very severe, the pessary must be removed, and not introduced again till after the subsidence of the unfavourable symptoms, when it may be introduced again, and allowed to remain a few hours, or until it excite the same symptoms, when it ought again to be removed; after a time you again introduce it and allow it to remain a longer time, and so on until you persuade the parts as it were, to its habitually remaining. If the parts cannot be reduced from the numerous adhesions they have formed, or from other causes, you must support them by means of a suspensory bandage to prevent any further increase, and also to defend them from injury. Excoriation is apt to occur in these cases from the urine constantly dribbling over the parts—keeping the bladder empty by the catheter, and the parts clean, allowing the patient diluent drinks, seem to be the best palliatives for this disease. Inflammations also occasionally occur in these cases, attended with great pain and fever, requiring the same treatment as inflammation of any other part. Bleeding from the arm, leeches to the parts, cold lotions, fomentations, poultices, purgatives, and perhaps digitalis, will, I believe, be found the most useful remedies for this disease.

LECTURE XLV.

Prolapsus Uteri.—Is a more common disease than the one spoken of yesterday. The womb descends, but not so far as in the previous case ; the patient complains (more particularly in the evening) of aching pains in the back, loins, hips, and thighs ; and a feeling of bearing down, as if the contents of the pelvis were dropping out. The bladder often suffers much in these cases, from obstruction, or you have great irritation of that organ, the woman passing her urine twenty or thirty times a day ; sometimes there is also irritation of the rectum from the womb bearing on it. The upper part of the vagina is often much dilated from the frequent descents of the womb, and on examination you find it blocked up with mucus all around the os uteri. Your examinations should be made in the evening, for from the patient being up and at work all day, the protruding part is much lower down : if you examine in the morning, the womb may be returned nearly to its proper situation, so that the displacement is not so readily recognized.

Treatment.—If the disease is not severe, the womb descending but little, the horizontal position may be tried, either on the bed or sofa. The patient must avoid all urging, and to prevent this she should be taught to pass the catheter for herself. Injections, either of the sulphate of alum or zinc, may be also tried, beginning with one drachm of alum to a pint of water : this may be thrown into the vagina by means of a proper syringe six or eight times a day, increasing the strength of the injection as the parts will bear, till at last you use a saturated solution. If these means fail, pessaries must be used to keep the parts in

their proper situation. If you use the ring pessary, first examine the size of the vagina, and then choose a pessary you think will fit. Oil this—introduce it into the vagina, and place it on a level with the brim of the pelvis against the os uteri. The smaller the pessary the better, as long as it supports the parts. This kind of pessary will be found the best for married women, but some women cannot bear this kind ; then the balloon-shaped may be tried. The balloon or ball pessary is made of lignum vitæ, box-wood, or gum caoutchouc—this latter substance the best. Before it is introduced you must smear it over with white of egg instead of oil, and then slide it up the vagina towards the promontory of the sacrum : this kind is the best for the unmarried. If the patient has rupture of the perineum combined with prolapsus uteri, the common pessary will not stop in its place. In these cases one with a stem must be used, or, what is better, a belt may be made to go round the body, and another passing from it behind, comes under the thighs, and may be fastened in front, so as to support the perineum, but not so tight as to gall and distress the patient. With this bandage the common pessary may be used. If the woman be so irritable as not to bear pessaries, sponge will answer very well—it may be medicated with either zinc or alum lotions. Care is required that the sponge be not too large ; for if so, it increases the disease it is intended to cure. The health suffers in these cases more than in procidentia of the womb, and requires great attention.

Relaxation is a disease more common than either of the varieties I have mentioned, and at the same time more difficult to discover. The womb comes down but a little way, not more than about an inch,

doubling the vagina along with it in its descent, causes mucous discharge, resembling leucorrhœa, attended with aching pain in the back and loins, irritation of the bladder and rectum, a sense of bearing down, as if the contents of the pelvis were coming forth, and in most cases great disturbance of the constitution; the woman becomes irritable, nervous, dispeptic; she has heartburn, eructation, vomitings, &c. and, if married, may fancy herself pregnant. In a woman labouring under these symptoms you may suspect the disease, but it is by careful examination only that you discover whether or not the disease exists. If so, the vagina will be found very relaxed, and on passing a catheter, the urethra will in general be found more or less distorted. Evening examination is here even more necessary than in the former case, for the descent being small the parts are so little displaced in the morning, that without you are skilful in your investigations the disease will entirely escape your observation.

Treatment.—Improve the health by tonics, bitters, nourishing diet, pure air, small doses of mercury, occasional laxatives, &c. If the patient reside in a large town, as this for example, a removal to the sea-side will be found highly beneficial. The patient must be kept as much as may be in the horizontal position, lying on a bed or sofa, but not so as to injure the health, which too much confinement is apt to do. Injections of alum or zinc must be used assiduously: perhaps if used in the form of powder they would be found more beneficial, not being liable to run off so quickly as the injections. Powdered galls might be used. All straining, either from bladder or rectum, must be avoided, as this tends to increase the disease, and may cause it to end in prolapsus. The bladder

must always be kept empty, as it tends to keep the womb within the pelvis, and the catheter may be employed for this purpose, or the patient may lie in the horizontal position with the head and shoulders as low as possible and the hips a little raised, for half an hour or an hour, and then attempt to pass her urine ; or she may by means of the finger get a bearing on the os uteri and push it into its place, when, the pressure being removed, she may pass her urine without difficulty. If all other means fail, a pessary must be used. In the early months the womb occasionally descends, giving rise to the same symptoms as before enumerated ; but this is effectually relieved if you cause the patient to lie in bed a few weeks ; the uterus rises out of the pelvis about the fourth month of gestation, and gains a bearing above the brim ; in these cases, always keep the bladder empty, for it may delay if not detain the uterus in the pelvis. If much pain, small bleedings may be required : in the latter months from its large size the womb rarely descends, but if the womb be small, and the pelvis very capacious, it may come down so far as for the os uteri to be seen externally ; if not producing much disturbance, you had better not meddle : leave the woman to her own resources. If at the end of gestation, and the prolapsus causes any dangerous symptoms, or if the womb be lying between the thighs and cannot be reduced, rupture of the membranes, discharge of the waters, inducing delivery will be the best : you may also assist in dilating the os uteri. If the womb should protrude after delivery, you find a large tumour lying between the thighs as large as the foetal head, and on examining it you find the os uteri sufficiently open to admit the finger. Plain as this is, I have heard of two cases in which the practitioners

were so ignorant as to mistake the disease; in one case the protruding womb was cut away with a pen-knife; in the other, the woman seemed to die from the severe handling of the part. As soon as the womb protrudes, replace it, first emptying the bladder, if it be loaded; confine the patient to her bed for six or eight weeks without suffering her to rise; the lower she lays with her head and shoulders, the better. It has been proposed to extirpate the womb altogether in cases of prolapsus, but this is at present far too dangerous a remedy, and it is not improbable but some other parts, as the bladder or intestines, would protrude after this was removed, becoming as troublesome as the original disease. Again, it has been proposed to bring on inflammation of the vagina by injections, &c. for the purpose of contracting or closing it so as to prevent any further descents; could this be done about the time the catamenia cease to flow it would be well, but at present we have not it in our power to induce contraction at pleasure; indeed I have seen the most violent inflammation, and also slough, produced without causing this effect. Perhaps we might in some cases, by removing a circular portion of the mucous membrane of the vagina, and bringing the parts in apposition by sutures, succeed in curing the disease—applicable only after the cessation of the catamenia.

LECTURE XLVI.

On Pessaries.—Pessaries are instruments intended to be introduced into the vagina for a support to the

uterus, vagina, or bladder, should a descent of any of these parts demand their use. There are several kinds of these instruments, viz. the ring, ball, balloon, and sponge pessaries. First, then, of the *ring pessary*, the most common in general use: it consists of a circular plane of various material—box-wood, lignum vitæ, ivory, silver, or caoutchouc, thick all round the edges, but becoming gradually thinner towards the centre, through which there is an aperture large enough to admit the fore finger—not larger, lest the uterus, bladder, &c. be forced through the opening, and become strangulated. The surgeon should be supplied with a number of these pessaries, varying in diameter, so that he may choose one he thinks most suited for the vagina after he has ascertained its size by examination. Having made his selection, he lubricates it well, and the woman being placed in the recumbent position, or, what perhaps is better, in the usual position for internal examination, he takes a pessary and introduces it into the vagina by a sort of rotatory motion, but with gentleness, till he places it in the upper part of the vagina, towards the promontory of the sacrum in apposition to the os uteri, which now rests upon it as upon a shelf, and is thus supported. If the pessary introduced be too large or too small, or turns edgeways, which they are apt to do, it can easily be removed and another replaced, and you should always tell your patient, to avoid giving any disappointment to her, that it is very probable the first size will not suit, and that a second may be necessary. If a change is deemed necessary, they are easily removed; you pass your finger into the vagina and lay it into the central aperture of the instrument, and roll it towards you, avoiding injury to the vagina. This sort of pessary does not much obstruct the vagina,

and may be used in all cases—in married women more especially—and if properly introduced, causes but little disturbance. The great nicety in their introduction consists in carrying them upwards and backwards, not directly upwards, for in this case you give great pain, and the instrument props against the symphysis pubis, and cannot be introduced.

The Ball Pessary, made of box-wood, or other material, is of a rounded form, as its name implies ; hollow throughout, and having numerous small apertures through each end, to allow the flow of the catamenia. Through these holes tapes are to be passed and tied together so as to form loops for the more ready abstraction of the instrument. The same position and method of introduction is required as the former. They may be expected to give some little pain in passing the vaginal orifice, but advancing along the canal, the passage becomes more easy. If on attempting to withdraw the instrument the tapes give way, forceps with blades separable, as the common obtetric forceps must be used. A pessary made of a kind of canvas covered with caoutchouc, is sold by Thompson, of little Windmill Street, somewhat of an oviform shape ; a small puncture only is required to cause them to collapse when their removal is required. White of eggs is to be used instead of oil, (which has a tendency to dissolve the caoutchouc,) for their lubrication.

The Sponge Pessary was much used by the late Dr. Haighton, and, according to him, with obvious advantage :—it is an instrument, however, which, without careful management, will increase the disease it is intended to cure. When from irritability of the parts the common pessaries cannot be borne, sponge cut into an oviform shape, but not so large as to dilate the vagina, may be used. Tapes should be united to

it for its more ready abstraction. The patient should be provided with three or four of these pessaries, that after each has been worn a day or two, it may be withdrawn, and undergo a thorough ablution before again used. It was the practice of Dr. Haighton to saturate the pessary before its introduction with some astringent lotion, as alum or zinc; and he has often thought the patient derived much advantage, the vagina becoming constricted in some measure; if this be observed, the sponge should be cut less and less, so as to allow, if possible, a radical cure.

Stem Pessaries only are required where the vagina is more than ordinarily relaxed, or where the perineum is torn through; of this instrument there are several forms. The one recommended by Dr. Clarke I have tried, and to this I now call your attention; it consists of a ball to be introduced into the vagina, and in front of this issues a piece of wire fastened by a sort of staple to the ball in the vagina, and to a bandage in front and also behind; being incurvated, it passes between the thighs, and has a bearing on the pudendal orifice, yielding a very effectual support. This pessary answers very well, but is liable to one objection, that is, the soft and tender parts are apt to get between the wire and the staple, causing painful compression. Another form of the stem pessary consists of a ball mounted on a pewter stem, which, from its flexibility, can be incurvated to any degree. After the introduction of the ball this stem may be screwed into a socket on the bandage at a proper elevation; if inconvenient to the patient when placed in front it may be bent so as to lie between the nates behind.

General remarks on the use of Pessaries.—Any form of this instrument may be used in two ways:—either keeping it in the parts without removal for

years together, (for from constant use the woman becomes habituated to it, and suffers no inconvenience;) or it may be worn in the day time and removed at night, if the woman be in good health, and more particularly if married; it may be worn in the day time only, and removed and replaced as a part of the dress. If you cannot depend on the woman, the less you trust her the better; the pessary had better constantly remain, yet they ought not to remain unnoticed, for in some cases pain, attended with mucous discharges, is caused from their presence; in such cases, the pessary should be instantly withdrawn, and the parts carefully investigated, for some other disease may be forming, or there may be inflammation of the vagina. In this case you had better confine the patient strictly for five or six weeks to the horizontal position, to give every chance for the vagina to become constricted. When designed to be permanent, the larger pessaries should be used; when for daily removal, the smaller. The size of the vagina may be ascertained by means of a hard-boiled egg or a lemon, and a ball pessary be chosen accordingly. Pessaries, although I have known them to have been worn for a number of years together, yet occasionally produce dangerous consequences—obstruction of the bladder and rectum, with bruises, inflammations, ulcerations, or thickenings—walking, or any other motion causing great inconvenience. I have known the rectum laid open by ulceration into the vagina from the use of a large pessary. The ball pessary, when too large, may occasion much swelling and itching of the parts just within the passage, which in some cases may perhaps not be understood; a removal of the instrument relieves all these troublesome symptoms.

These instruments, when of proper size, and judi-

ciously placed, are excellent remedies ; yet, from the impatience and fidgetty state of the patient, every advantage is lost. If the pessary first introduced does not happen to suit, she will have it removed, but loses all confidence in the remedy, and will not allow another to be introduced. To avoid this, you will do well, whenever the instrument is proposed, to explain to her the folly of so doing, and the immense advantage she sacrifices by rejecting the instrument, from the trivial inconvenience of a few days only.

LECTURE XLVII.

On Polypus of the Uterus.—This disease requires to be thoroughly understood, so that when it occurs it may be known at once and removed ; for if this be neglected, should the polypus arise from the neck or body of the womb, dangerous floodings may be produced, and the patient ultimately sink from exhaustion. A polypus is hard, firm, insensible, and of a somewhat rounded form, and consists of two parts, the body and the neck, but they are both of the same structure throughout ; the neck may be large, and the body small ; or, the neck may be as small as the little finger, the body at the same time large perhaps as the fist or foetal head. The size varies according to the age of the growth ; at first it is only like a pin's head, or pea ; but when of weeks, months, or years' standing, it acquires considerable size—large as the head of the full-grown foetus—as large as its whole body, or even larger than this : its substance resembles a schirrus

tumour; is smooth on its surface generally, (but occasionally efflorescent), being covered by the inner surface of the vagina, so that floodings do not occur after examination; but if it occupy the neck or cavity of the uterus, then examination occasionally causes violent floodings: but where it arises either from the mouth of the womb or upper part of the vagina, no floodings follow your examination. When it arises from the body of the womb, it may be shut up in its cavity, like the ovum, but in general it protrudes either externally or into the vagina, sometimes suddenly and with pains resembling those of labour. If the polypus grows from the mouth of the womb, it so disguises the part that there is great difficulty in distinguishing it: you find merely an aperture; but if you pass a probe carefully upwards, you will find it leads into the cavity of the uterus. The genitals in general are sound during the growth of these tumours, but occasionally you have prolapsus, schirrus, or inversion of the womb conjoined.

Treatment.—The disease should be ascertained as early as may be, for the sooner this diseased structure is removed the better; for if the ligature be applied while the polypus is small, it causes little or no pain, and the system sustains no particular disturbance; its early removal also prevents those violent floodings which are apt to follow the extirpation of the tumour in its later and more bulky state. The modes by which polypi may be removed are three; namely, by the knife, the forceps, or ligature. Of the three modes I prefer the last—for I believe it to be the safest and best.

The proper time for applying the Ligature.—Some say wait till the polypus comes into sight—never follow this practice, for the woman may perish long be-

fore this occurs, from floodings, &c. Others again recommend the removal of the polypus when you can distinguish its neck. Others again advise its removal when the os uteri can be felt encircling the tumour. For myself, I would recommend you to attempt the removal as early as possible; if you fail, you can try again after a time. There are three modes of applying the ligature, all of which I shall describe. First then, of Levret's instrument: it consists of two tubes lying side by side, and united together throughout their whole length by solder. Another instrument somewhat similar to this is mentioned by Burns; it consists, as the other, of two tubes, but these are united by means of a slide instead of solder, which can be removed at pleasure. In both these instruments, nearly alike in their structure, wire, ley-cord, or silk twist, covered over with gold wire, may be used, one end of the cord being passed up one tube and down the other, so as to form a loop. In Burn's instrument you carry the point of the instrument up to the stalk of the polypus, and keeping one tube there, you slide the other all around the neck of the tumour, carrying the ligature along with it. After having done this, you again get both tubes together, which must be fastened by the slide, thus completely encircling the tumour: with Levret's instrument the loop is placed over the neck of the polypus with more difficulty. Hunter's polypus needle, as it is called, for ordinary cases will, I believe, be found to answer best. It consists of a piece of stiff yet flexible iron, mounted on a handle, with a hole for the ligature at its upper extremity; in ordinary cases thin gold twist will be found the best ligature.

On the different modes of applying the Polypus Needle.—If the neck of the tumour be small, you

may form a loop by passing both ends of the ligature through the eye of the needle, and carrying this up to the tumour by means of the finger; place the loop around the neck and then draw both ends tight, and tie them to the handle of the needle. Or you may only pass one end of the ligature through the needle, and carrying two fingers of the left hand to the neck of the tumour, you glide up the needle armed with the ligature to the same part, when you may pass the needle all round the neck, and thus include it in the ligature: you must now draw the eye of the needle within sight, and pass the other end of the ligature through it, and drawing it tight, you secure the polypus. Another mode consists as before in passing one end of the ligature through the eye of the needle. You also carry it to the neck of the polypus, but in this mode you keep the needle firm, and carry the other end of the ligature around the tumour with the fingers, and then passing the end through the eye of the needle, you draw it tight, and fasten it as before to the handle by means of small ivory studs placed there for the purpose. The handle of the instrument should always be fastened by means of tape to the thighs of the patient, to prevent any displacement. Be careful also not to draw the ligature so tight as to cut it through. You must also avoid including the os uteri in the ligature, for this might give rise to very disagreeable symptoms. To avoid this, always feel for the os uteri before applying the ligature, and if possible avoid including it; you may know when you have done so by the pain, sometimes vomiting and fainting, on tightening the ligature. If the neck of the polypus be very long, apply the ligature as high as you can to avoid the os uteri, and you will find the remaining portion of the neck goes away of itself after the extir-

pation of the body. If the neck of the polypus be very large, silver wire will be found to answer best ; it cuts through the part more speedily than the twist.

You ought to see your patient daily, and tighten the ligature. Should the ligature cause much irritation, vomiting, &c., it must be immediately slackened ; allow the symptoms to subside, then again tighten it. You should tell your patient to be extremely careful how she moves, for without care the handle of the instrument may be struck and the upper extremity driven through the vagina. When she is obliged to move, she should be told to lay hold of the handle of the instrument to prevent any injury : you must also tell her that the needle may come away suddenly, for unless she is aware of it, it might cause great alarm.

The polypus may come away easily or with great difficulty ; much depends on the size of the neck of the polypus, on the ligature used, and also on the degree of tension with which it is applied. It may be from two or three days to sixteen or seventeen. If the polypus be very large, it may be left without danger where it is for several days, until it has become softened from putrefaction ; it then easily comes away. Should the patient, however, have symptoms of a typhoid character, it must be removed either by means of the common obstetric forceps, or a hook may be introduced under the guidance of the fingers, and the mass brought away, taking care, however, not to inflict any injury on the vagina. After the removal of the polypus, always examine the parts, to find whether there be another remain behind. It rarely happens, yet occasionally two, three, or more are formed. Polypi are occasionally found, growing from the vagina, but of a very mild form, and the only inconvenience is that caused by the obstruction of the part :

they are readily removed by the ligature. Polypi again are formed around the mouth of the womb, and as they increase in size, this part becomes so connected with the neck of the tumour as not to be distinguished, except by the most careful examination. The lips of the os uteri disappear, and the mouth itself seems merely the opening of a mucous follicle, not unlikely to be mistaken for inversion of the womb. Occasionally, too, the polypus seems to inclose the os uteri, so that it appears to form a part of their substance, rendering the application of the ligature difficult. Pain and floodings are also often attendants on these polypi. Polypi may grow in the cavity of the uterus, and remain shut up there, giving rise to pain in the back and loins, with much forcing and bearing down, and the tumour may burst suddenly from the uterus, and lie forth between the patient's thighs; or it may protrude merely into the upper part of the vagina, leaving the uterus very gradually. This may readily be removed by ligature, but when inclosed within the womb itself, it requires a skilful operator to remove it. Again, polypi are occasionally formed in the upper part of the vagina, having their origin either from the neck or mouth of the womb, the vagina being at the same time very much contracted, so that on examination you seem to feel the end of the vagina immediately. You must ascertain with great care the cause of this shortening, and having done so, find out the origin of the tumour, and apply a ligature if possible. Violent hemorrhage often occurs in these cases. Again, occasionally, though I believe very rarely, you will meet with cases in which the polypus descends into the vagina, and contracts adhesions, so that on examination you feel the fundus, but cannot reach the peduncle. In general, however, I believe the adhe-

sions are slight, and may be torn through by the finger, so as to enable a ligature to be applied to the base of the tumour for its removal. Be careful, however, of confounding diseases of the schirrus kind with this, for if you should attempt to tear them, fatal consequences might result. Polypus occasionally inverts the uterus, known on examination by your having two tumours instead of one. In this case the ligature had better be applied to the vagina, so as to remove both together. The woman must be carefully watched, for alarming symptoms may be produced from the ligature.

The last variety of polypus is that which manifests itself after delivery. A polypus may be formed in the uterine cavity, and the woman becoming pregnant, both the ovum and polypus continue to grow in the uterine cavity; perhaps no bad consequences happen during gestation, or at delivery; but after the expulsion of the foetus the diseased mass may be expelled into the vagina, though very probable not without much pain and flooding. A case of this kind occurred to the late Dr. Haighton, but did not fall under his notice till several days after delivery; its size equalled that of the full-grown foetal head; it was removed in a few days by the ligature, the woman did well, and again became pregnant. Before the application of the ligature for the removal of polypus, the bowels and bladder should be evacuated, so that the patient may remain perfectly quiet for some time after the operation.

If the pain from the ligature be severe, any of the preparations of opium may be given. Batley's anodyne, or the black drop, will be found as good as any. The vagina may be well washed out with either warm water or a weak solution of the chloride of soda, to keep the parts as clean as possible, and also to remove

the disagreeable foetor from the decomposed mass. The symptoms indicating polypi, when they arise from the os uteri, or parts below it, are pains of a forcing, cutting, bearing down character, with floodings resembling miscarriage. Discharges of blood and mucus are not unfrequent. The health in general is not much impaired, but the woman has a very ex-sanguineous appearance. Polypi may prove fatal either from the repeated floodings they induce, or when the application of the ligature has been too long delayed, from the collapse of the vital powers under its use; lastly, from its combination with some other disease. The ligature, if properly and early applied, rarely fails in curing the disease. Polypus, like prolapsus uteri, descends somewhat towards evening, and also from voluntary bearing.

LECTURE XLVIII.

Chronic Inversion of the Womb very much resembles polypus, and, without careful investigation, may be mistaken for it; it may indeed be caused from polypus, but in the great majority of cases is to be referred to delivery. On inquiry you find the patient has been ill since her last confinement—that there was much difficulty in extracting the placenta—and that she is, about every four, six, or eight weeks, liable to large eruptions of blood, occasionally followed by large masses, leading the patient to suspect she has miscarried. You find her very much reduced—the countenance has a pale and ex-sanguineous appearance—the legs are more or less œdematous according to the

length of the disease. On examining the tumour as it lies in the vagina, you may at first suspect it to be polypus; but if you feel above the pubes, you find no uterus there, and, by passing the fore finger of the left hand into the rectum, and pressing it forwards above the vaginal tumour towards the symphysis, and with the first and second finger of the right hand urging the tumour back upon the rectum, you may, as it were, press the finger from the rectum above the head of the vagina, and satisfy yourselves the uterus is not there. The uterus, too, will be found more sensible than polypus, when constricted. All these symptoms being considered—the time of its occurrence—the loss of the proper situation of the womb—the monthly flooding, &c. leave little doubt as to the nature of the disease.

Treatment.—Try to abate the floodings by injections of alum or zinc—by the decoction of oak-bark or galls thrown into the vagina eight or ten times a day, increasing the strength gradually according to the effects. This treatment is more especially applicable to those cases where the patients are about the age of forty; for if you can so abate the floodings as to prevent any particular failure of the constitution until the catamenia ceases, it is highly probable the bleedings will cease, and the patient be freed from all danger; but should you fail—as in younger women more especially, from the increased uterine action, you are very likely to do—then what is to be done? Formerly the case was thought desperate, and the woman suffered to bleed, month after month, till she perished; but at the present day it is well known the inverted womb may be removed by ligature as well as polypus, and that without any very great danger. A ligature of silver wire or gold twist may be applied by means of

Hunter's needle. The womb will generally be separated about the eleventh or twelfth day. The woman must be carefully watched, and should pain and irritation of the parts, with vomiting, &c. occur, opium must be given and the antiphlogistic plan of treatment adopted. Should the symptoms increase, the ligature must be immediately slackened, and kept so until the symptoms subside: if the woman be of irritable constitution, this may be required several times before the final removal of the tumour. The vagina may be kept clean, and fœtor removed, by frequent injection of tepid water, or a weak solution of the chloride of soda. In these cases, from the amenorrhœa produced from the removal of the uterus, the woman becomes stout, and determination of blood to the head is not unfrequent, rendering the abstraction of blood from the arm or neck, by cupping, necessary. Pregnancy cannot occur in these cases—not even extra-uterine—for the contact between the male semen and female rudiments is intercepted; yet as the ovaria are not removed, the sexual appetite remains: indeed I cannot take upon me to say this would not be the case occasionally, even if the ovaria were removed.

On indolent Schirrus of the Uterus—There are three varieties of this disease. In the first variety, either part or the whole of the uterus, together with the ovaries and bladder and rectum, may be involved. Under this form of the disease the uterus becomes hard, firm, cartilaginous, and greatly enlarged—it may be as large as the closed hand or the fœtal head, the womb at the end of gestation, or even larger than this. In the second variety you have tubercles formed on the surface of the womb—there may be ten, twenty, or more, varying in size, some as large or larger than a pullet's egg. The womb, when cut into, will be found per-

fectly healthy. In the third variety you have only one or two tubercles, variously situated on the fundus, mouth, front, back, or sides of the womb; the rest of the womb may increase greatly in size, and occasion much distress by pressure, more particularly on the bladder and rectum. Other diseases may exist in conjunction with these different schirrosities of the womb, as polypus, fungus, &c., all in themselves more or less formidable; but it is important to remember that there is no ulceration—indeed I know of no case in which the disease has ended in ulceration—and the larger the womb gets, the less likely is this to happen; for if the womb was only the size of a hen's egg, it might be cancer—a very different disease. The state of the os uteri varies very much in this disease; it may be perfectly healthy, or it may be large, small, the opening hardly perceptible, or it may admit one or two fingers; it may be softened or indurated, forming a valuable sign of schirrosity of the womb. The upper part of the vagina, if the disease be of long continuance, becomes much thickened and indurated. You may have patients come before you with the disease in its early as well as its more advanced state. If the disease is of long standing, you find the abdomen as large as at the end of gestation, and may suspect pregnancy, but on inquiry you find the enlargement is of years' growth. Extra-uterine pregnancy it may be; but this is so uncommon as to render it very improbable. You also distinguish it from enlargements of the liver and spleen, by finding the disease began in the pelvis, and has been some time in acquiring its present situation. You may also distinguish it generally from enlargement of the ovaries, by finding it occupies the place of the gravid uterus, inclining little to one or other side; and should the disease be of the

tubercular kind, you find the uterus of a knotty and uneven appearance, with inequalities on its surface, more or less in number; or should the disease be of the diffused kind, it will exactly resemble the womb at the end of gestation, except that it is more hard and firm. All these signs occurring, you will have little difficulty in ascertaining the nature of the case. In the more early state of the disease the diagnosis is more difficult: perhaps the woman comes to you when the womb is not enlarged more than to acquire the size of the foetal head, complaining of a number of distressing symptoms; she has a sense of bearing down, as if some of the viscera were about to protrude, with irritation of the bladder; pains about the rectum, resembling hæmorrhoids; perhaps she has cramps, numbness, or partial paralysis of the lower limbs, from the pressure of the tumour on the nerves, with occasionally pains of a tearing, lancinating character; she may also tell you that, on lying down, she can feel a swelling in the abdomen, about the symphysis, resembling somewhat the foetal head. Led by these suspicious signs of the nature of the disease, you may make an internal examination, when, perhaps, you find the upper part of the vagina hard and thickened, the os uteri indurated, and the womb itself as large as in the fourth month of pregnancy, leaving little doubt of the nature of the disease; yet if the investigation be not conducted with sufficient care, it may be mistaken and set down as some other disease, as chronic inversion—an error which I have known to occur. Sometimes the womb descends somewhat, the os uteri is contracted, and the aperture cannot readily be distinguished: a blunt probe passed into the uterine cavity assists the investigation. The womb in the fourth month of pregnancy may be mistaken for this

disease ; should you, however, suspect pregnancy, you will do well to defer your decision, and examine again in a month or two, when, if from pregnancy, the womb will be much enlarged. In all the varieties of the disease, discharges of mucus or blood are not unfrequent—occasionally the catamenia continues to flow regularly. Abscesses may form in the pelvis, from the irritation and inflammation occasioned by the tumour. In the diffused kind the ovaries are occasionally schirrous, causing dropsy. These different varieties of schirrus may occur at the age of thirty, and the woman live till seventy, the disease not necessarily destroying life.

Treatment.—No rough remedies should be employed in this disease ; beware of salivation, or too copious blood-letting, for you may injure the constitution, and make the woman worse than before. Iodine, if the morbid growth was small, might perhaps in some cases be used with advantage, but in general we have little hope of removing the disease by absorption ; yet, according to Dr. Clarke, this may happen : he relates a case of double tubercles wasting away, the woman dying of some other disease. On examining the womb after death, traces of the tubercles were still apparent, and clearly showing their previous existence, of a larger growth. In the early state of the disease impregnation is not impossible. Should this occur—perhaps under the powerful action of the absorbent system following delivery—the diseased matter might be now and then removed. In the present state of our knowledge, our treatment must consist chiefly of palliatives, according to the symptoms. If you have inflammation induced, leeches, fomentations, laxatives, and low diet, may be necessary. If you have spasm in the womb, leeches, fomentations, and poultices may be applied above the

symphysis pubis, and opium must be administered either by the mouth or rectum. If much irritation of the bladder or rectum, always examine whether the womb is retroverted or prolapsed; for either may occur. If the womb be prolapsed, treat as directed in a previous Lecture; if retroverted, push it above the brim.

Prognosis.—Although in general the disease does not, at least hastily, destroy life, yet it may, by its pressure, cause other diseases. In one case the rectum was laid open, and the contents discharged into the peritoneal sac, from the pressure of the tumour. It may also spread, and involve various important parts in the same disease, as the bladder, rectum, &c. Again, polypus or fungous growths may accompany this disease: the woman, too, may have tubercles in other parts, as the liver; or she may have floodings, more particularly if fungus accompany the disease. You will be careful, therefore, of pronouncing too favourable a prognosis in these cases. In cases of reputed schirrus of the womb of long standing and large growth, it is of moment to determine whether the enlargement of the abdomen may not be from some other cause, as air, fat, water, or enlargement of some of the abdominal viscera. Enlargements from air are very elastic, yield readily on pressure, and may be pushed to one or other side of the abdomen. Dropsical swellings may in general be distinguished, without the sac be unusually thick, by an evident fluctuation, easily recognised when the fluid is in the peritoneum, with more difficulty when ensysted in the ovary, bladder, or womb. Enlargements from fat are not confined to the abdomen, but pervade equally all parts of the body, and are therefore easily recognised; so that if, on examination, you have enlarged abdomen, hard, firm, and less yielding than at the end of gestation,

and not to be attributed to any of the above causes, we have good reason for concluding that the enlargement is from some solid growth; but to decide to what viscus of the abdomen this enlargement is to be referred becomes a fresh consideration—it may be an enlargement of the liver, spleen, or ovaries: if from the liver, you find the swelling more on the right side, and occupying more or less the epigastric region, of a firm, hard, and unyielding character; if it be the spleen, it will be formed on the left side, and perhaps its margins may be traced by the hand; the ovaries generally occupy one or other side of the abdomen, according as either may be affected. The enlarged uterus will in most, if not in all cases, be found at the inferior part of the abdomen, above the symphysis pubis, and at an equal distance from each of the wings of the ilium—to be distinguished from pregnancy by the tardiness of its growth. If the disease be of the tubercular kind, and these are felt through the abdominal coverings, the diagnosis becomes more certain; if, also, the upper part of the vagina or *os uteri* be indurated, there can be little doubt remaining. Schirrosity of the uterus and ovaries may be combined: by allowing the bladder to become distended, and emptying it just before the examination, the abdominal coverings become relaxed, and the investigation is greatly facilitated. In the early state of the disease, when the enlargement does not exceed that of the foetal head, the diagnosis is more difficult. In a case of supposed schirrus in its early stage, you must empty the bladder, lubricate the abdomen, place the woman on her left side in the usual obstetric position, and passing the two first fingers of the left hand *per vaginam*, you place them on the mouth of the womb, the right hand being applied at the same time above the symphysis pubis;

by this method the enlarged womb may be easily felt, and its bulk and firmness readily ascertained. In some cases, placing the index finger of the left hand on the rectum against the back of the schirrous womb, the thumb of the same hand resting at the same time on the uterine mouth, and the right applied above the symphysis pubis, as before, the state of the womb can be ascertained with great nicety. This investigation is greatly facilitated if the woman have borne children, or if, as is sometimes the case, she is become lean and emaciated. As in the former case, if the womb be felt tubercular, the vagina or os uteri indurated, the value of the diagnosis is greatly increased. This enlargement of the womb may be from pregnancy, moles, hydatids, polypus, &c., and in careless examinations the head of the foetus may be mistaken for schirrus; but in the last case, in moles, and also in pregnancy in the early months, the quick enlargement of the womb soon puts the matter beyond all doubt. If from moles or polypus, the enlargement may be slow, and error is more likely to be committed: but if the case be treated as before recommended, it will cause but little practical inconvenience. Sooner or later the diseased structures are expelled. You may have fungus, polypus, schirrosity of the ovaries accompanying schirrosity of the womb;—proceed with due caution, therefore, in giving your opinion in these cases.

LECTURE XLIX.

Cancer of the Uterus differs from the indolent schirrus previously considered, by the womb not be-

coming much increased in size, perhaps not more than double its original bulk ; while in the indolent schirrus it may be as large as the full-grown foetus. In the first stage of the disease the womb is hard and of a cartilaginous character, and at this period perhaps no other part is affected ; but as the disease advances, the vagina becomes involved, more particularly its upper part ; as the disease advances the ovaries, rectum, and bladder, from their contiguity, become also affected. If you examine in the early stage you find the womb and perhaps the vagina hard, thickened, and cartilaginous, and frequently an irregular cavity may be distinguished, varying in size sufficient to admit a pullet's egg in some cases ; with difficulty, the tips of two fingers in others : about this time ulceration commences, the inner membrane of the parts gives way, and a surface is exposed which bleeds on the slightest touch ; an excavation is formed, the edges of which become ragged, and the ulceration spreads more or less in extent, broad as the disc of a shilling, a half-crown, a crown, or larger than this. Sometimes, however, the excavation is filled up with a fungous growth ; or it may project beyond it, bleeding on the slightest touch. The progress of the ulceration is generally slow, yet progressively increasing, spreading gradually over the surface of the parts beneath, laying open in its progress the rectum or bladder ; the ovaries and fallopian tubes may in this stage of the disease be affected with schirrus ; but I never saw them of great size. The glands of the groin and pelvis may also be enlarged, and contain a cheesy sort of matter ; but in the early stages of the disease I believe the glandular system in general will be found but little affected. Tubercles are occasionally formed on the peritoneum, in the

lungs and liver, as I myself have seen, but I have never seen cancer of the uterus and mammæ combined. Perhaps, too, in the commencement of the disease, the constitution is not affected; in its first commencement it may be merely local, and if the schirrous mass was extirpated, the patient might recover; at least the progress of the disease might be checked, and that perhaps for years. The mouth and neck of the womb seems almost invariably to be the primitive seat of the disease; the cause of which I believe may be referred to the glandulæ Nabothi. Women may come to you with the disease in its first stage; but in general the second. In the first stage the symptoms are not very apparent; but in the second you find the patient with a wasted, withered, sallow, cachetic, malignant appearance; an appearance in the face easily remembered when once seen—often very striking to the eye; yet with difficulty described by words. Sometimes, however, the limbs alone are wasted, the face yet retaining a certain degree of plumpness. Further, in this stage of the disease you have an offensive discharge from the genitals peculiar to carcinoma, of a dirty green color tinged with brown, and of a watery consistence; you have also almost always floodings, occurring at uncertain intervals, more or less severe in their character, and indeed this may be the first intimation the patient receives of the existence of the disease. Floodings to a great extent are more liable to occur if the ulcer be filled up with a fungous growth. The woman complains of aching, stabbing, forcing, urging, bearing, lancinating pains in the neighbourhood of the pelvis, as the sacrum, back, loins, pubis, hips, and extending down the thighs; she always complains of micturition, severe in some cases, more mild in others. The urgency of the symptoms vary in the

different stages of the disease, and also in different women; some women have little pain in the early stage, but towards the latter the pain is agonizing, the woman enjoying no relief, except from the most powerful anodynes. If you have had much experience, and possess considerable dexterity, the disease may be made out by internal examination; you find at the upper part of the vagina a hard substance, large as a swan's egg and of a cartilaginous hardness, and in this a cavity of variable extent, with ragged edges; or, the hollow may be filled with a fungus, bleeding with the gentlest touch: the fingers when withdrawn have a very offensive smell, not easily got rid of; but this last symptom is not invariable: the vagina below the parts seems to be perfectly healthy in structure.

The speculum vagina, if you do not possess sufficient manual dexterity, may be used, and by means of this instrument the disease may be readily ascertained. These examinations should be conducted with great gentleness, for rough examination may cause dangerous floodings. Women in the middle period of life are the most liable to this disease, but I have observed it as early as twenty-eight, and as late as sixty-four, as well as the intervening periods. Family predisposition does not seem particularly strong, yet I have known two members of one family die of this disease. The married and unmarried seem equally prone.

Treatment.—Nothing can be done in the ulcerative stage of the disease, except extirpating the diseased structure. If, however, this is objected to, or the disease has gone on too far for any operation to be of use, all you can do is to palliate the symptoms, and mitigate the sufferings of the patient; for this purpose anodynes are the most useful—opium, hyo-

cyamus, conium, lactucia, may each be given in their turns. The extract of stramonium may also be tried, but no remedy will be found equal to opium. Its various preparations may be given as they seem to suit best; of these the wine of opium, Battley's anodyne, the black drop, and the different preparations of morphia, will be found the best; they may be given either by the mouth, or introduced into the rectum in the form of clyster or suppository, or applied to the surface of the body in the form of lotion or ointment. If by clyster, three or four ounces of gruel and a quantity of black drop sufficient to relieve, may be thrown into the rectum; if it cause irritation and is rejected, then two drachms of the mucilage of gum arabic may be mixed with black drop, so as not to make altogether more than a couple of tea-spoonfuls, and this may be injected; if it succeed, it may be used three or four times a day, according to the urgency of the pain. Suppositories made with two or three grains or more of the powdered opium and three or four of soap, may be passed beyond the sphincter and three times or oftener during the day. If the medicine is given by the mouth, the smallest quantity that will give relief, the better; but she must be allowed sufficient to mitigate her sufferings, and to smooth and comfort the path to that grave, her final home, to which she is fast hastening, so that the little remains of her life may be passed in moderate ease. Injections may be used, as they tend to amuse the patient, and to the friends you seem to be doing something. A decoction of poppies with a little of the solution of the acetate of lead answers very well for this purpose; this may be thrown gently and gradually into the vagina once or twice a day; it must not be thrown up with impetuo-

sity, for in the last stage of the disease the vagina is not unfrequently ulcerated through or nearly so, and if so, the injection would get into the peritoneum, and cause inflammation and death. These injections, if attended with no other benefit, at least keep the parts clean, and in some measure remove the foetid smell. In the early part of the ulceration the uterus may be extirpated. I have performed this operation four times: the first died, the second was cured, the third and fourth died. A case operated on in Derbyshire recovered, as have others on the Continent; remember, therefore, that when patients come to you with the disease in the last stage of ulceration, all you can do is to palliate symptoms, but in the early stage of ulceration the diseased structure may be removed, provided that no other disease exist, as tubercles of the lungs, liver, or an enlargement of the lumbar or pelvic glands, and that with at least a chance of success; and as the operation improves we have reason to hope that its dangers will be much diminished. At some future period, perhaps, when the diagnosis is better understood, the disease may be made out, and the part removed before the ulceration commences, or the constitution suffers from it; but in the present state of our knowledge we are not justifiable in having recourse to the operation before ulceration has begun. Floodings may occur in these cases of malignant ulcerations, more particularly if combined with fungous growth, to be treated as recommended in flooding cases. Should inflammation occur, leeches, laxatives, fomentations, and other remedies, must be employed.

Women sometimes come to you before ulceration commences, suspecting from their symptoms that carcinoma is about to begin. If other members of

the same family have died of cancerous disease ; if the patient complains of pain in the back, hips, loins, and extending down the thighs, of a cutting, darting, shooting, lancinating character. If on examination you find the os uteri open, firm, indurated, and painful under pressure, although you may not be able to say exactly that it is carcinoma, yet you have strong reason to suspect the disease, and should keep a vigilant watch on the case, that you may discover the first beginning of the ulceration, when extirpation might be had recourse to. It should be your object in these cases to put down the symptoms as they rise. If you have inflammatory action, leeches, fomentations, &c. should be applied over the symphysis pubis, or about the vagina, and by the use of the warm bath and laxatives, by keeping the patient quiet, avoiding cold and damp, and allowing no sexual intercourse, we may greatly retard the disease. If the patient be free from pain and nearly well, you need not be so active in your treatment.

Cauliflower Excrescence—a disease allied in its character to carcinoma, growing from the upper part of the genitals, and of a more or less malignant character. It seems to arise from the neck or mouth of the womb, and also from the mucous membrane of the vagina. Skilful examination at once detects it. The ligature can seldom be applied to the base of the tumour, by reason of its breadth ; but in some cases the base is small, and if you can only include one-half of the tumour in the ligature, the whole will be removed, as they are of very weak vitality. You must not expect a radical cure ; but you may, by extirpating it as often as required, preserve the life of the patient for years. It seems to be the large serous discharge accompanying this disease which reduces the strength,

and causes death ; but in general you have not the carcinomatous aspect, although it may be of long continuance, but the patient may become greatly wasted. The lunar caustic might be tried, to keep down the diseased growth.

Fungous Excrescence—a disease previously mentioned as growing from the excavated cavity in the carcinomatous womb, may, perhaps, in some cases, arise on a surface healthy enough. This fungus causes floodings, with serous and foetid discharges. Examination at once detects the disease. In some cases all you can do is to palliate the symptoms and abate the discharges. In some cases a ligature might be applied, or the diseased parts might be removed with a kind of spoon-shaped scalpel. Inversion of the womb is occasionally combined with this fungous growth—an accident to be greatly wished for, as I can conceive both might readily be removed by a ligature, and with great chance of success ; but in the surgery of these parts, and in that of the abdomen generally, much remains to be known.

LECTURE L.

Schirrus of the Ovary is not unfrequently perhaps combined with schirrus of the womb, previously described ; and whenever you have a schirrus of the ovary, always examine if the womb be diseased also. As in the indolent schirrus of the womb, so in that of the ovary, two kinds of the disease are found—the diffused and the tubercular. In the diffused kind the whole ovary becomes affected—it loses its original

character, and is completely changed in structure—increases greatly in its size, but its surface remains smooth and equable. In the tubercular form of the disease the whole ovary is not affected. Schirrus lumps are formed of variable size—sometimes to be felt through the abdominal coverings. Sometimes only one side of the ovary may be affected, or you may have both, but unequal in degree ; or the fallopian tubes and uterus may be involved in the disease. Inflammations and abscesses are sometimes combined. If the inflammation be superficial, the ovaries may become glued to the neighbouring parts by adhesive matter, and numerous and strong adhesions formed. Ovarian dropsy is not unfrequently combined with schirrus ; and therefore it is that schirrus of the ovary is more dangerous than the same disease affecting the womb. I suppose the dropsy to be brought on by increased action in the vesicles of De Graaf. If a woman comes to you in the latter stage of the disease, you find the abdomen large, as at the end of gestation, and may suspect pregnancy ; but in the true schirrus you will find this enlargement the result of several years' growth—five, six, or more—and that it was first observed by the woman's feeling a small tumour in the inferior part of the abdomen, not in the centre, but lying either to one or other side. If it be smooth in its character, you may merely distinguish on which side it is ; but in the tubercular kind you can ascertain the nature of the disease with greater accuracy. You also sometimes find, on examination, schirrosity of the uterus and upper part of the vagina. Women may also come to you with the disease in its incipient state—the tumour, not larger perhaps than a melon, or the foetal head, has fallen down into the pelvis, and may be causing weakness or loss of power in the lower limbs, with pains

along the nerves, particularly the sciatic, so that the patient lies much on the sofa or bed: this seems to be caused by the enlarged ovary pressing on the origins of this nerve. She also complains of difficulty in evacuating the bladder and rectum, and of a feeling of bearing down as if something was about to come forth. Perhaps the patient tells you she thinks there is some tumour; you examine, and find a tumour blocking up the pelvis, with the vagina situated in front, and the rectum behind it; or it may be too large to pass the brim of the pelvis, and may be resting on the hollow of the ilium, on one or other side, the woman's attention being first directed to it by the pain and inflammation it has excited. After emptying the bladder, and placing the patient in the recumbent position, so as to relax the abdominal muscles, it may sometimes be readily distinguished, more particularly if it be of the tubercular kind. Tumours may form on the broad ligaments, and be taken for schirrus of the ovaries; but, as they require no different treatment, should you mistake them it would be of little practical importance. In general, in these schirrous tumours the health is not much impaired; but, as the disease advances, œdema of the lower limbs is not unfrequent: beware, therefore, of mistaking the case, supposing it dropsy of the peritoneum.

Treatment.—No rough remedies should be employed. Avoid strong doses of elaterium—mercury to salivation—large doses of conium—rough purging; for these do no good, but a great deal of harm, by the distress they occasion, and by reducing the constitution; and after the tumour has acquired the bulk of the foetal head (which is generally the case before it is discovered), no reasonable hope can be entertained of the absorption of the tumour by any medical treat-

ment we can employ. When the diagnosis of this disease is better understood, perhaps iodine, mercurials, and other remedies, judiciously administered, may be attended with success in some cases : at present all we can do is to palliate symptoms as they occur. If you have pain about the centre of the pelvis, give anodynes in doses sufficient to relieve ; if you have inflammatory action, bleed, purge, leech, foment, give diaphoretics : digitalis, given with caution, might also be of service ; and by this palliative treatment it is astonishing how long persons will live with this disease, provided no dropsy be combined with it.

While the tumour is in its early stage it often occasions great distress by falling into the pelvis and pressing the rectum or bladder, or both ; and now it is that the pains and weakness in the limbs, before mentioned, occur. The bladder being evacuated, and the patient placed in the recumbent position, we may, by well-directed pressure, push the tumour above the brim, and thus relieve the patient of all her troublesome symptoms. If much pain in the nerves, iron and other neuralgic remedies may be given, as these seem to render the nerves less sensible to morbid impressions.

Prognosis.—This disease, though often causing great inconvenience, from its weight, its bulk, and pressure on the surrounding parts, is not in itself a very fatal disease ; yet it often becomes so when combined with other diseases, as dropsy. Inflammation and suppuration may also be the cause of death, from the pressure of the tumour on the surrounding parts ; yet, by palliating symptoms, and avoiding all causes tending to injure the health, the life of the patient may be preserved for years. If married, she had better separate from her husband ; for if she become pregnant, and the passage of the pelvis should be ob-

structed by the tumour, death to both mother and child might be the result. In the present state of our information no surgical operation can be warranted. If the tumour is not causing much distress, you had better wait; or should the woman complain of great pain and inflammation, the high probability is, that the part has become so tied down to the different parts by adhesion, that no operation could be performed—at all events, not without very great danger, and after the operation the other ovary may also be found diseased.

Dropsy of the Ovary in general, sooner or later, proves fatal. Beginning by a drop, it increases to a drachm, to an ounce, a pint, a quart, and so on, till at length gallons are formed. I am sorry to say we possess no diagnostics sufficiently characteristic in the very early stages of the disease; for, if it could then be detected, the ovary might be extirpated with every chance of success. The accumulation may take place in one syst, which may contain several smaller ones within it; or you may have it take place in several systs of equal size, sometimes communicating, as seen in a preparation of the late Mr. Cline, but very seldom; so that if you tap, you only empty one, or the operation may fail altogether by the trocar being pushed between the systs. The internal surface of the syst is generally smooth, but, according to Burns, sometimes more or less covered with excrescences somewhat resembling the cotoledons of the cow. In different cases the thickness of the syst varies; in some cases it is not thicker than brown paper, in others, as from schirrus, it may be as thick again as my hand. The contents of these systs vary very much in consistency; sometimes the accumulation is watery, in others of a more viscid and gelatinous consistence; or the

contents of one syst may be limpid and watery, the other viscid and thick as treacle. The contents of the syst, as to whether they are watery or viscid, may be determined by the fluctuation; although much depends on the thickness of the syst—if the fluctuation be lively, then the contents are watery; if sluggish, the contents are either of a gelatinous consistence, or the walls of the syst are of very great thickness. The systs, even when of an immense magnitude, may not be adherent to any of the adjacent parts; but sometimes there are extensive adhesions, as in cases where there has been much pain and inflammatory action, and it is much to be regretted that we have no certain means of knowing whether or not there be adhesions—if none, the ovary might be extirpated, and the disease cured.

The Characteristics of Ovarian Dropsy.—During the early formation of this disease you will most commonly find the diseased ovary situated above the brim on one or other side of the false pelvis, about the size of the foetal head, and of a smooth or tubercular character. The tumour is readily discovered, but whether it is solid or contains fluid is not, in this stage of the disease, easy to determine, from the want of fluctuation; but if you examine again at the end of a few months, you easily discover, by the increase of bulk, whether the tumour is of a solid or fluid character—if fluid, whether watery, gelatinous, or puriform: the quick enlargement of the tumour, and the fluctuation, vivid or sluggish, felt through the abdominal coverings, readily point out the enlargement to be from fluid. Again, as in schirrus, so, in ovarian dropsy in its early stage, the tumour may fall into the pelvis, and produce great irritation by its pressure on the bladder and rectum. On examination, you find—with

the vagina in front, and the rectum behind—a tumour blocking up the pelvic cavity; and if the walls of the syst be thin, an evident fluctuation, more or less distinct, may be felt: these, with other symptoms produced by the tumour, readily determine the nature of the disease. When the disease is of long standing and large size it is readily made out;—you find the abdomen more or less distended and giving to the feel a fluctuation more or less evident according to the fluidity of the contents and the thickness of the syst. If the swelling is not of very large size, you find it occupying the inferior and lateral part of the abdomen; but when its size is greatly increased, it may occupy both sides of the abdomen, but, on inquiry, the woman tells you when first discovered it was situated either on the right or left side. The surface of the tumour may be smooth or tubercular—the latter more easily distinguished; so that by these indications, and also by the rapidity of its growth, the nature of the disease becomes apparent, either with or without schirrus. In this stage of the disease you may have œdema of the lower limbs, more particularly on that side on which the swelling rests. The health in the early stage of this disease is little impaired, but, as it advances, it becomes much impaired, and the woman suffers greatly from cachexia: the flow of urine may be natural, or much diminished in quantity. Beware of confounding this disease with dropsy of the peritoneum, or distended bladder.

LECTURE LI.

The Treatment of Ovarian Dropsy may be divided into two kinds, the palliative and that by which the disease may be radically cured. Little benefit can be derived from medicine either by way of cure or palliation; perhaps the less you do the better. No rough remedies must be used. The more drastic purgatives, as elaterum—emetics—mercury to salivation—digitalis in large doses should be avoided, as tending to injure the constitution, and no absorption will take place; if the fluid be removed one day, it accumulates again the next. The best palliative is tapping, but even this ought to be delayed as long as possible, for when the woman is once tapped, the fluid accumulates again with great rapidity: you may sometimes wait two or three years before you tap, but when you have tapped, she may be filled again in six or eight weeks; the reason of this is not satisfactorily made out: it may be that the pressure is taken off the syst; delay therefore the first tapping as long as you can, the operation only being performed from the urgency of the symptoms, as difficulty of breathing, &c. Before tapping, always ascertain if the woman be pregnant or not, for remember there are cases of dropsy of the womb; indeed I have heard of cases in which the womb had been tapped during pregnancy: even if the woman has been tapped before, the investigation becomes necessary, for she may have become pregnant since the first tapping. Always empty the bladder before tapping, for in some cases it may be enormously distended and mistaken for ovarian dropsy: remember also, that the fluid may be in different systs, not communicating with each other, or schirrus

may be combined, and the walls of syst may be of great thickness, so that if you do not push the trocar far enough no water flows. Perhaps in these cases of schirro-dropsy it would be better that no operation be performed. Should the fluid be contained in different systs, always to be suspected in the tubercular ovary, I would prefer tapping one at a time, as this would very likely relieve the immediate symptoms, and tend to prevent the very rapid accumulation. Remember also the trocar may pass between two systs. Hydatids also, I believe, may occasionally be formed in the ovary, so that in these cases you had better explain to the friends of the patient the chance of your not being able to withdraw all the fluid, for this may prevent great disappointment. It has been said the fluid becomes thicker after each tapping, but as before observed, the fluid may be of a very gelatinous consistence from the first, always to be suspected if the fluctuation is obscure. In a woman labouring under ovarian dropsy at the east end of the town, for which tapping was recommended, I found the fluctuation very obscure, although the growth had been rapid, which induced me to tell the friends of the patient, as my opinion, that the contents of the tumour were probably viscid. After the operation had been performed, very little fluid came away, but enough to show the viscosity of the contents, and that the dropsy was of the incysted kind; the swelling remained nothing decreased. The late Mr. Abernethy afterwards saw the case, and prudently recommended that no operation should be performed; observing, it would not do to go on boring holes in the belly: the patient ultimately died.

In the large accumulations it is recommended to draw off only a part of the fluid, as there is danger

of collapse if all this fluid be removed at once. The late Mr. Chevalier tapped the ovary of a woman containing seventeen gallons of fluid. Notwithstanding the caution with which he operated, and although he removed the fluid at three or four different times, extensive inflammation of the system ensued, matter formed to the extent of one or two gallons; hectic fever came on, and the woman died in three or four weeks. The patient may die after tapping, however well the operation has been performed—it may be from exhaustion—from the rapid accumulation—or it may be from inflammation. Several gallons of matter may form, although the patient feels no pain; this is, I suppose, from the ovary having few or no nerves. Some women sink after the first tapping, others after the operation has been performed five or six times, which seems to be about the average number. There are cases, however, which bear the operation in a surprising manner, the constitution seeming to suffer but little, the operation being performed fifty, sixty, eighty, or more times; and immense quantities of fluid removed, numerous cases of which are on record. A woman was tapped eighty times by the late Mr. Martineau, of Norwich, and thirty hogsheads of fluid taken from her. But beware of grounding your general practice on these exceptions to the general rule—for as such they may be looked upon. Tapping, to say the least of it, is but an uncertain remedy. The frequency of tapping is various—much seems to depend on the fluid effused: if watery, and containing but little coagulable lymph, the system is not much affected by it, and the woman may undergo the operation a great number of times; but if the fluid be of a gelatinous consistence, serous, and containing a large quantity of coagulable lymph, the patient becomes

speedily exhausted.—Don't tap if the patient be much exhausted.

We come now to speak of the *radical treatment*, which has for its object the cure of the disease, and which may, I believe, be successful in some few cases, but these must be well selected. In my Essay, entitled "*Physiological Researches*," you will find under the head "Abdominal Surgery" all the principal facts drawn together which had then come to my knowledge respecting the possibility of laying open the abdomen more or less extensively, proving that, although this might not be done without danger, yet that it does not necessarily destroy life. Since then, Mr. Lizars, of Edinburgh, has operated upon a woman, and removed from her a schirro-dropsical ovary, and from this operation, although the abdomen was laid open from the ensiform cartilage to the crista of the pubis, the woman completely recovered, fully proving that death does not necessarily follow extensive wounds of the abdomen, as some surgeons seem to think, especially in this country. Not to mention other cases in which the abdomen has been laid open more or less extensively, one case I have heard of, in which the abdomen was laid open under the supposition of ovarian tumour, but none was found: the woman fortunately recovered. Now, knowing that, although extensive wounds cannot be inflicted on the abdomen without danger, yet at the same time that these wounds are not necessarily fatal, it becomes a point of great importance whether, in so desperate a disease as dropsy of the ovary, we might not lay open the abdominal coverings, and remove the syst, having previously reduced its bulk by abstracting the fluid; yet, as before stated, the cases are few, and require selection; and before you attempt to re-

move diseased ovary, various important points are to be considered. As in other important operations, the system should be favourable ; the state of the ovary, in connection with the adjacent parts, becomes the next point of consideration ; for it must be remembered that the ovary alone may not be the seat of disease, but also the vagina, womb, or opposite ovary—not unfrequently the two latter—cases which, in the present state of our knowledge, are very unfavourable for operation. It must also be remembered that adhesions may be formed, tying down the syst to the adjacent parts : if slight, they might be torn through, and the syst easily removed ; but if they be extensive, firm, and of long standing, the operation would not be justifiable. Again, if there is schirrus in combination with dropsy, the bases of the tumour may be very broad—not impossible to be removed, yet greatly increasing the danger of the operation. When the tumour is of large size, it may be extirpated, as the operation of Mr. Lizars shows ; but at the same time it must be admitted that those tumours containing only a few quarts are more easily removed. Again, before we attempt to extirpate the diseased ovary, it is fit we should weigh against each other the danger of the disease and the danger of the operation : for although ovarian dropsy is a fatal disease, yet it may accumulate very slowly, and bear repeated tapplings, the health not, perhaps, being much impaired ; the operation, therefore, dangerous as it is in the present state of surgery, ought to be reserved for those cases only where the accumulation is rapid, and the powers of the constitution evidently on the decline. Much skill, tact, and experience are also required when extirpation of the ovary is under consideration, to discover whether enlargement of the part really exists, and also if

this be merely from fluid, from schirrus, or both combined; for I have repeatedly known inflation of the bowels mistaken for ovarian dropsy. It will be of great use to us in our decision if the ovary be tapped first; for then we may make our observations with greater facility and more accuracy. To sum up, therefore: If the system be deemed favourable—if the woman must perish if nothing be done—if we are certain enlargement of the ovary exists, and that no dangerous disease exists in combination, which cannot be removed, as from the broad basis of schirrus, or the firm and numerous adhesions from inflammatory action, from perhaps frequent tapping, binding the tumour to the contiguous parts—we are justified in operating, provided we have the cordial assent of the patient. If these conditions be wanting, we had better refrain. Perhaps in ovarian dropsy, the accumulation being of a watery consistence, and confined to one syst, we might, should circumstances prevent us from removing the tumour, hope occasionally to cure—the vessels of the ovary not being perhaps of large size—by removing a piece of the syst, say the size of a crown-piece; this would allow the discharge of the fluid into the abdomen; and the opening perhaps not closing, the effused fluid would be brought under the action of the peritoneal absorbents, and removed. Remember the case of the lady who was thrown out of her carriage on a heap of stones while labouring under ovarian dropsy, by which the syst was ruptured, the contents effused into the peritoneal cavity, and removed by the absorbents, the patient becoming perfectly well. Again, in these cases another practice might be adopted, namely, extirpating the tumour in its very early stage; or perhaps if we could tap the tumour when not larger than the foetal head. Although the operation might

require frequent repetition, yet the health of the woman would sustain much less injury than if the tumour was allowed to become of very great size ; and this operation I conceive might be readily performed provided we were sufficiently skilful. If the tumour was situated in the pelvis, or if above the brim in the iliac fossa, an opening might be made in the abdominal coverings, so as to admit the fore-finger being passed as a director upon the surface of the ovary to prevent the intestines or bladder from being interposed, and a small trocar and canula might be slid along this, and the contents of the tumour evacuated. However, I do not recommend that you should put these operations in practice, but merely throw them out for your future consideration ; for, any hints likely to be of benefit in the cure of this frequent and most formidable disease are well worthy of the most serious deliberation. Occasionally, although but rarely occurring, we have cases in which a spontaneous cure of ovarian dropsy takes place, and on which I now proceed to offer a few remarks. I have already referred to the lady who was cured of her dropsy by falling and rupturing the syst ; and a practitioner at New York, known to my friend Mr. Gaitskill, attended a woman who fell while labouring under ovarian dropsy, and ruptured the syst, recovering from her dropsy, at least for a time. Several other cases of spontaneous cure might be mentioned. Now, it does not seem impossible that now and then the ovarian syst, if very thin, might be ruptured from pressure, however applied ; though to suggest the manner how is perhaps no easy task. A second method of spontaneous cure, more or less permanent, is by ulceration, or rupture of the syst into the intestines, the fluid being discharged by stool. Some time ago, a woman of the name of Myers came into this

Hospital with an exceeding large abdomen; but this was only occasionally; the woman repeatedly got better after large spontaneous eruptions of water by vomiting and purging. Now, there can be little doubt this case was ovarian dropsy, discharging its contents occasionally into the intestines—a sort of natural tapping being performed. Again, it has been said that ovarian dropsy has disappeared spontaneously without any obvious cause to which this could be ascribed. A woman very large for a time at length finds herself somewhat diminished, and this going on week after week, she was at last become reduced to her original dimensions. But I fear some of these cases at least were not ovarian dropsy at all, but common ascites, or mere intestinal inflations. Yet Burns has referred us to cases which it would be uncandid to place to these causes. In these cases it has been said the fluid was removed by the mere action of the absorbents of the systs; yet even here it is not improbable that the systs were very thin (thin perhaps as brown paper), and that rupture of these occurred, with effusion of the fluid into the peritoneal cavity, and there removed.

A few miscellaneous remarks, and I have done.—By using a flat trocar and a canula you greatly diminish the pain of the operation. Adhesions of the syst to the neighbouring parts, the abdominal coverings in particular, may, I believe, be made out occasionally by the soreness felt after moving the abdominal coverings over the syst, and also by a kind of crepitus—sometimes very distinct—probably from rupture of the adhesive fibres, but the less of this disturbance the better. From the pressure of the enlarged ovary, the intestines sometimes become very much loaded; and that although they may act every other day,—to be

relieved by laxatives, glisters, &c. Be careful to avoid mistaking these collections of feculent matter for tubercular disease of the ovary. It is generally asserted the fluid in ovarian dropsy becomes thicker; but I have found the contrary, as late as the twentieth operation. Pus in more or less quantity is occasionally discharged on tapping; from, I suppose, previous inflammation—always to be regarded with apprehension, for occasionally the patient sinks; yet in some cases it is astonishing how little the constitution sympathises, greatly differing from that of the puerperal peritonitis. Ovarian dropsy, it is said, has disappeared after electricity: I must doubt its sanative effects; it, may, however, be tried. Injections with intention of causing adhesive inflammation, are, I believe, highly dangerous. If the large collection of matter from the adhesive inflammation was drawn off, it is doubtful whether the patient would recover; for, according to Burns, where the matter has been spontaneously discharged the patient has died*. Other diseases may

* A woman labouring under ovarian dropsy, with very gelatinous contents, so as hardly to run through the largest sized canula, had, after frequent tapping (about thirteen times, each increasing in frequency), inflammation of the syst. A large bucketful of matter was discharged very gradually by tapping, the woman at the same time remaining in the horizontal position, to prevent collapse: the wound ulcerated, the discharge continued, and the woman died from hectic in about four weeks. The liver was studded over with tubercles from the size of a walnut to that of a pea, imbedded more or less deep in the substance, and containing a curdy matter. The ovary was schirrus, occupying three-fourths of the abdominal cavity, and glued to all the contiguous parts by very firm adhesions.

affect the ovaries; but most of these have been considered, and the same treatment will be required, with little variation, in most cases.

LECTURE LII.

On the Bladder.—Before speaking of the diseases incident to the bladder, it may be necessary to make a few remarks on the viscus itself. The bladder, a musculo-membranaceous receptacle, of ever-varying capacity, is situated, when contracted, in the pelvis, but, when distended, it rises above the brim, and forms a rounded tumour of more or less magnitude, occupying one-third or one-half of the abdominal cavity in front, and may contain, when greatly distended, as much as two gallons of fluid. It is composed of three membranes—the internal one, the mucous membrane, the middle muscular—the fibres interlacing each other in all directions, and causing, by their contraction, a great decrease in the size of the bladder in every direction. The external, or peritoneal, is only a partial coat, covering merely the fundus and back part of the body; while, around the neck and front, the bladder is covered only by cellular membrane. Where it is covered by peritoneum, it is smooth; but rough, where in connection with cellular membrane. From the lower and front part of the bladder the urethra arises,—a canal about an inch and a half in length, lying upon the back of the symphysis pubis, throughout its whole length, and may at any time be felt by passing the finger upon the back of the symphysis pubis. The ureters, of which there are two,

pierce through the back and lateral parts of the coats of the bladder very obliquely. In examining the bladder, you pass the finger upon the anterior and upper part of the vagina; when you ascertain its condition almost as well as if your finger was within its cavity.

Retention of Urine.—Women are liable to retention of urine occasionally—it may be complete, but more commonly only partial. If complete, there need not be much difficulty in making out the case. The patient complains of violent pains resembling those of labour; the pulse rises to 120 or 130 in the minute, attended with great heat of the skin. On examining the abdomen, you find it large and very tender, and giving a very evident fluctuation; and the cause of all this you find to be from no urine passing, complete retention having existed several days. In some cases the woman has shivering or slight delirium.

Treatment.—Pass a catheter and empty the bladder: it may be necessary also to press upon the abdomen, the bladder having lost its contracting power from the over detention. The second variety, or where the retention is only partial, is more deceptive. You find the patient suffering from very acute pain, somewhat resembling labour; and if she be pregnant, she may believe herself to be in labour from the similarity of the pains. You find the abdomen large, hot, tender, and according to the fatness of the patient you feel more or less fluctuation: you may also find perhaps the legs œdematous. Never trust to nurses in these cases; if you desire the urine of the patient to be saved that you may remark on its quantity, it is not unlikely they will show you the urine of another individual, and if you ask them how the patient passes her urine, ten to one but you are told the urine flows

properly enough; but if you ask the patient, you find the urine flows involuntarily, and only a few drops at a time: with her utmost efforts she cannot pass her urine in a stream, or in any quantity. This disease may be mistaken for incontinence of urine—for ascites—for abdominal inflammation, or spasms—for dropsy of the uterus, which it greatly resembles. From the bladder partially relieving itself, the accumulation may go on for three or four weeks, giving rise to enormous distention of the bladder; four, six, or even eight quarts of urine may be accumulated. The examination of the abdomen, combined with the other symptoms, furnishes a strong proof of the nature of the disease:—the large and tumid abdomen—the patient, although she cannot retain her urine, not being able to pass it in a full stream, or in any quantity—and by the introduction of the catheter, with proper caution rarely fails to put you right with regard to the disease.

In passing the catheter several cautions are to be observed: be careful not to pass the catheter in the uterus, and draw off the liquor amnii. Should the woman be pregnant, be careful to pass the catheter far enough, so as to reach the bladder; be careful also not to use it with violence, for you may pierce the posterior part of the urethra, the point passing into the vagina;—be careful also the catheter is pervious, and that the holes in its sides are all open, and that the stylett also be withdrawn; be careful also not to pass the catheter into a mucous follicle, sometimes placed on the side of the canal, and extending half an inch or an inch in depth, mistaking it for the urethra. Be careful also to press on the abdomen when the catheter is in the bladder, for you have sometimes paralysis from over distention. A neglect

of these cautions might give rise to inflammation of the bladder, if not rupture.

Various causes may give rise to the retention of urine—you may have complete stricture of the urethra, two cases of which I have seen where the urethra was obstructed from one end to the other. In this case, bougies must be used to dilate the opening. Again, spasmodic stricture may be the cause of the retention common to nervous and hysterical women; it may be you are obliged to pass the catheter (which overcomes the stricture), for weeks together, and then all at once the woman regains the power of expelling the urine naturally. *Remedies.*—The cold and warm hip bath, with the tinctura ferri muriatis, and blisters to the sacrum and symphysis pubis. It has also been proposed to rub the extract of belladonna, on the upper surface of the vagina. If the patients won't use all their efforts to empty the bladder, (for it may sometimes be from mere caprice) blister them and use the cold shower bath two or three times a day, which does no harm, and may probably effect a cure. Another cause of retention is inflammation of the neck of the bladder; this may occur without delivery now and then, but generally you find it follows delivery—easily relieved by the application of leeches, say fifteen or twenty, above the symphysis pubis, poulticing the orifices to make them bleed—by fomentations, purgatives, and bleeding from the arm if necessary. Abscesses may form about the urethra, and give rise to retention. Poultices and fomentations must be applied, and the matter evacuated by the lancet as soon as possible. Retroversion of the womb may be the cause of retention; emptying the bladder, replacing the parts, and keeping the patient on her knees and elbows, so as to keep the pelvis in-

verted, will be the most effectual ; and by this plan of treatment you will succeed in curing the disease in four cases out of five. Again, by relaxation, prolapsus or procidentia of the womb, retention more or less complete will be produced, easily made out by examination. Replacement of the parts, and the introduction of a pessary, is the best treatment ; if slight, try astringent injections—pay great attention to the health—keep the patient in bed or on the sofa ; and if your patient be intelligent, you may instruct her to press the os uteri upwards and backwards, when she gets relief at once, or she may be taught to pass the catheter for herself. Prolapsus of the bladder may produce the same disease—relieved by pessary. By recto-vaginal tumours retention of urine, more or less complete, may be produced : if solid after emptying the bladder by catheter, we must, if possible, push the tumour above the brim ; if a dropsical tumour, then tapping with a very small trocar and canula, or three or four acupuncturations might be tried. You may have retention from paralysis of the bladder ; it may be from injury inflicted on the back, as by a fall or blow, known by pressure being required on the abdomen to make the urine flow after the catheter has been introduced into the bladder. Blisters, frequently repeated, to the sacrum and symphysis pubis, the warm hip bath, and keeping the bladder empty by the catheter, seem to be the remedies most worthy of reliance. In some occasional cases, you may be called to a patient supposed to be labouring under retention, when in fact there is no urine in the bladder, it being a case of suppression, not of retention ; if you pass a catheter in these cases, and use force, which has no place in obstetrics, you may chance to perforate the bladder—known by finding no swelling on examining the abdomen. When the urine is retained,

try to make it pass away without the use of the catheter. An active stimulating glyster thrown into the rectum might cause the urine to flow. It may be necessary to tap the bladder, but the cases are extremely rare. These then are the various causes of retention of urine, and their modes of treatment.

On the Catheter.—From retention of urine, it becomes necessary we should have recourse to the catheter, and for this purpose instruments have been invented, various as to size, form, and material. Some are made of pewter, flexible metal, caoutchouc, or silver, most commonly the latter. The length of the catheter should be about six inches: it is generally made either round or flat; the latter, the contrivance of Dr. Ramsbotham, will be found the best, as occupying less space. There is also the double catheter of Dr. Clarke—of this advantage at least, that if the larger one will not pass, the smaller, which is within the larger, may be used with greater chance of success. Catheters should not be made straight, as being more likely to pierce the back part of the urethra, but have a somewhat bold curve, so that the point when introducing, may pass upwards and forwards. At the lower end of the catheter a stop ought to be placed, as this gives you a firmer hold, and prevents it from slipping into the bladder. The upper end should be closed round and blunt, with numerous apertures at the sides to prevent obstruction in the flow of urine.

On the Introduction of the Catheter.—Having chosen a catheter, you must procure two vessels, a large one and one of smaller size, as a basin and a decanter, or any other bottle. I prefer the decanter to receive the urine as it flows from the catheter.

The other vessel is placed by your side, to empty the contents of the decanter into, if necessary ; for sometimes the bladder is enormously distended. You next proceed to discover the orifice of the urethra, and this is the most difficult point ; but if you are at all skilful, it will be rarely necessary to expose the person. There are three modes by which the orifice of the urethra may be discovered :—first, placing the woman on her left side, you pass a finger into the vagina, and pressing upwards, you feel the urethra like a piece of ley-cord, then withdrawing the finger along the canal, you come to the orifice.—Secondly, by feeling for the arch of the pubis, you succeed immediately, for directly within the arch is situated the orifice of the urethra ; this method requires dexterity, but with a little practice you may feel the orifice at once. In some cases the orifice is flat and small : in others large and membranous.—The third mode is the most complicated ; it consists in placing the woman in the recumbent posture on her left side ; you then plant the tip of the left index finger on the clitoris, and carrying it downward about an inch between the nymphæ, raise the finger, and you will find it over the orifice of the urethra. Having by one or other of these modes found an orifice, you lubricate the catheter, taking care not to block up the lateral apertures, and pass it into the opening, carrying it gently onwards with the finger and thumb ; at the same time, raising the point of the instrument, you pass it upwards above the symphysis pubis, but without force, for you may push the point of the instrument through the back part of the neck of the bladder, and the patient perish in consequence. Beware, therefore don't hold the catheter forcibly between the thumb and finger, for the urethra may be tor-

turous in its course—if it seems disposed to turn, let it—I have known it nearly complete the circle before entering the bladder. The catheter once in the bladder, the urine generally flows easily enough on withdrawing the stylett, but sometimes you are surprised to find that no urine flows; this may be from various causes. The calibre of the instrument may be obstructed from some foreign substance—the lateral apertures may be closed from clots of blood, mucus, &c. The catheter may not be in the bladder, but introduced into the vagina or uterus—or if force has been used, the catheter may have pierced the back part of the urethra; or if you have not passed the instrument far enough, so that it does not lie in the bladder at all—more likely to happen in retroversion of the womb—or the bladder may be paralytic—or no urine may be secreted. Lastly, the instrument may have passed into one of those mucous follicles previously mentioned, and I will give you a case well illustrative of this point. A lady in the country had retention of urine; the practitioner, a well-informed man, passed the catheter, and drew off the urine; but on attempting a second time, failed, and finding he gave pain, declined making further efforts. The nurse, very liberal in giving her opinion, advised that another practitioner should be called in; he came, a rival of the former, and took some mean advantages of this trifling incident; he passed the catheter with success, but on attempting a second time, he, like his predecessor, also failed, after using some degree of force, causing pain and some little bleeding. Matters standing thus, Dr. Haighton was called in, who introduced the catheter very well the first time, but, like the other two, failed, on a second attempt. Calling to mind, however, this mucous fol-

licle, he examined more carefully, and found that the difficulty arose from the catheter sometimes entering one canal, and sometimes the other : thus put on his guard, the difficulty vanished. The urethra may lie in several directions : in retroversion of the womb, it may lie on the back of the symphysis, being drawn more upwards than ordinary ; in procidentia uteri, it may be in a course stretching downwards and backwards towards the point of the os coccygis ; in relaxation, the canal is often very tortuous, from the urethra descending somewhat—known by the catheter turning when introduced. If the urine be in very large quantity, you will do well to draw off only part ; allow the bladder to contract, and after the lapse of a few hours you may introduce the catheter again and abstract the remainder : by this practice I think you are less liable to inflammation—always to be guarded against after the abstraction of the urine. Should it or any other disease occur, you must treat on general principles.

LECTURE LIIL.

Rupture of the Bladder.—The bladder may be burst open by a fall or from over-distention, either anteriorly or posteriorly. If the laceration be in the anterior part, the urine gets into the cellular web situated about the bladder and vagina in front, causing inflammation, suppuration, slough, and death. If the posterior part of the bladder gives way, the urine escapes into the peritoneal cavity and amongst the viscera : here we must draw off the urine immediately,

and wash out the peritoneum with distilled water at the temperature of ninety-eight degrees of Fahrenheit, by means of a syringe, as long as the water retains any of the characteristics of urine. The bladder being empty and relaxed, might be drawn to the opening, and the lacerated parts included in a ligature, the ragged portions lying beyond might then be cut away, and also one end of the ligature: the bladder should be kept constantly empty by a catheter. By this plan of treatment I think that now and then patients might recover if we operate sufficiently early. I injected two ounces of human urine into the peritoneum of four rabbits, and left it there an hour; I then abstracted it, and washed out the peritoneum with tepid water. Three of these rabbits died of peritoneal inflammation, but the fourth recovered; affording a hope that extravasation of urine into the peritoneal sac may not in every case produce inflammation, if removed within an hour from the effusion. I have also included the fundus of the bladder in a ligature, and cut away the upper part; and in several cases with success. Mr. Travers also has tied up an aperture in the stomach with success.

Incontinence of Urine is caused by different causes, more or less grave in their character. It is often brought on by retroversion of the womb. Retention of urine is first brought on by the obstruction of the urethra, and this after a time is followed by an involuntary flow of urine in small quantities—sometimes in gushes attended with forcing, bearing down pains, resembling those of parturition. Empty the bladder by catheter, replace the uterus as previously directed, and the disease is cured. Carcinoma of the womb causes incontinence, by the ulceration spreading and laying open the bladder into the vagina.—No effectual

relief. Happily this does not take place till the patient is near dissolution, so that this new evil is not of long continuance. Dilution of the urine by aqueous fluids, and keeping the parts clean by frequent ablutions with tepid water, seem to afford the greatest comfort. Again, you have incontinence occurring from parturition. During delivery, the bladder should be kept empty : when neglected, the head of the fœtus coming down into the pelvis divides the loaded bladder into two parts—one above, and the other below the symphysis pubis, and this latter part, if the bladder be not emptied by the catheter, is liable to be burst open should the pains be strong, the pelvis small, the child's head large, or, it may be, from the rough use of the lever or forceps ; a large gush of urine follows the disruption of the bladder, giving the first indication of its occurrence. This accident is curable in some cases, but in others every mode of treatment fails. Attending to the patient's health, and keeping a catheter constantly in the bladder, with a bottle, or a bullock's or sheep's bladder fixed at the lower end to receive the urine, may, in some cases at least, allow the lacerated parts to heal like any other incised wound ; for there is a great difference between this opening in the bladder and that caused by slough, for in this all the parts of the bladder may come in apposition, and by the inflammatory action throwing out adhesive matter, becomes closed ; but in slough you have a loss of substance in both bladder and vagina. Take care the catheter does not become obstructed by mucus ; if you find it clogged, change it ; for if the instrument be kept clear, very little of the urine will flow through the wound, and every thing depends on your keeping the urine flowing through the catheter ; by attention to this, perhaps to dilution of the urine, to position,

and the patient's health, you may sometimes get the wound to close. I have seen one case where the bladder had been burst open, from the use of the lever, so extensively that I could have introduced two or three fingers, and yet, on examining the part again some time after with great care—for it became the subject of legal investigation—I found the wound perfectly closed, and the woman had regained considerable power in retaining her urine, under the treatment I have already mentioned. You have also incontinence produced from *slough of the vagina and bladder*, from laborious labour, or the abuse of instruments. The slough may be small, so as hardly to be distinguished, or it may be of great extent, laying open the back part of the neck of the bladder into the vagina, so as to admit the passage of two or three fingers. On inquiry you will find the patient refers the origin of the disease to parturition: she tells you she was quite well before, but the first few days after delivery the urine either came away involuntarily, or the catheter was required; that in a few days the power of expelling the urine returned, but in a few days more a piece of what she calls skin came away (but which is the sloughed portion of the vagina and bladder); and that ever since this she has not been able to retain her urine. Should any doubt remain as to the nature of the case, by examination either with the speculum or touch, the disease becomes evident beyond all doubt. There are two modes by which this disease may be treated—that with a view to a radical cure, and the palliative.

Palliative Treatment.—If the urine be acrimonious, it causes irritation, inflammation, and excoriation of the vagina, with offensive discharge. To relieve this, the patient must drink freely of toast and water, lin-

seed tea, gum water, or barley water—one or two pints in the twenty-four hours, but not with her meals, lest it derange the digestive functions. By this method you remove the acrimony of the urine, and cause it to flow more copiously; but if the urine possesses no acrimony, no drinks must be allowed. Frequent ablutions of the parts, by means of a half-pint syringe furnished with a long tube, so as to reach the upper part of the vagina, will be found of great advantage. By means of this syringe, tepid water may be thrown into the vagina six or eight times daily, so as to keep the parts thoroughly clean. Some prefer the hip bath, and the use of Reed's syringe at the same time. Another method of palliation is by means of some instrument to close the opening in the bladder. A ball pessary, one-half its sphere covered with soft sponge, is recommended by Mr. Barnes (who has written a paper on the subject) for this purpose: he advises this instrument to be introduced into the vagina as any other pessary, and slid up the opening in the bladder, and the sponge, if the aperture be of any size, makes its way into and closes it. The belt and pad may be also used. When the patient wishes to evacuate her urine she may withdraw the plug, or, what is better, be taught to pass the catheter for herself. Sometimes, under peculiar positions of the body, the urine may be retained to some ounces without a plug: this may depend somewhat on the situation of the aperture; but more, I conceive, is to be attributed to the vagina. The neck of the bladder lies in contact with the vagina behind, and this latter may swell a little and become pressed into, and close the aperture. These, then, are the principal palliatives.

Radical Cure.—With hope of radically curing the disease, Burns has recommended laying open the ure-

thra into the ruptured part, when this is small. This operation, he thinks, would cause inflammation, and adhesive matter being thrown out, a closure might be expected. On the Continent, the actual cautery is used in small ruptures of the bladder. A speculum is introduced into the vagina, and the aperture being discovered, an iron, heated white hot, is applied to the part two or three times, its object being to destroy the callous edges, and produce the adhesive inflammation. A catheter must be left constantly in the bladder, and the parts as little disturbed as possible. If we could succeed in including the ruptured part in a ligature (a difficult, yet not impracticable operation), we might often, I conceive, get the aperture to close, and cure the disease.

Another cause producing incontinence yet remains to be mentioned, namely, that which results from *debility of the neck of the bladder*. This variety is very apt to occur where women have had large families, more particularly if the pelvis be small, or the child large. From laborious labour the bladder is apt to become very weak about the neck, so that it loses very much of its retentive power, and perhaps from the moment of delivery she is incapable of retaining her urine, or should she at any time chance to laugh, cough, rise quickly, or in any manner contract suddenly the abdominal muscles, the urine comes gushing away. If it come on after delivery, it may cure itself in a few weeks or months; but if it come on gradually, getting worse after each delivery, I believe no remedies will have any good effect. The cold hip-bath daily, with attention to the general health, may be tried. Blisters to the back and front of the abdomen have also been recommended. These may be repeated five or six times, as the parts may bear. I think that

you might blister the upper part of the vagina where it lies in contact with the neck of the bladder, and with advantage—more so, perhaps, than from the remote vesication of the loins and abdomen.

On Leucorrhœa.—Women are sometimes troubled with a discharge from the genitals, called the Whites, or Leucorrhœa. It may be from organic disease, as cancer, schirrus, cauliflower excrescence, or polypus. We suspect this, if there is wasting of the body, pain in the back, hips, and thighs, with discharges of blood, or an aqueous discharge, of a dirty red or green colour, acrimonious in a high degree, and of a very offensive smell. Internal examination, carefully made, proves at once the nature of the malady. There is another form of this disease, of an inflammatory character, but wholly uncombined with any organic disease. The discharge may be of the puriform character. There may be heat, pain, redness, tenderness, and swelling, with throbbing about the vagina and external parts; pain also during sexual intercourse, with perhaps pain and scalding in making water, so as to resemble very strongly gonorrhœa in all but its infectious character. If the discharge is very acrimonious it may not only excoriate the woman, but also affect the individual with whom she has intercourse, so as to lead him to suppose he labours under shancres. Far more frequently, however, the disease is wholly unconnected with inflammatory action; the discharge is thin mucus, white, yellow, green, or transparent like white of egg. This disease may be brought on by any stimulant to the vagina, and also by various affections of the mind. The countenance is pale and haggard, the hands and feet are cold; she is dispeptic, nervous, or hysterical, and, on the whole, has a very cachectic appearance.

Treatment.—It must always be your first object to ascertain that this discharge is not the result of some organic change—generally ascertained by the symptoms. If you have floodings and offensive discharge, with other symptoms previously mentioned, an examination should always be carefully instituted, which will enable you to decide with certainty. Again, suppose you have no disorganization, you then wish to know whether the disease is inflammatory or not: Always remember, this variety of the disease is unfrequent, but the gleet form is of very frequent occurrence; add to this, the pain, swelling, &c. of the external parts: astringent injections, too, if the disease be inflammatory, give great pain and aggravate the disease; whereas if it be the gleet form, they will most probably cure. Well, then, having a patient labouring under the gleet form of the disease, you must endeavour as much as possible to improve the general health by change of air and scene, keep the bowels regularly open, allow the patient mild diet in small quantities, frequently repeated, every five or six hours. The patient had better not take any drink during her principal meals, as dinner or supper, for example, but two or three hours either before or after, for much liquid dilutes the gastric juice and impedes digestion. If the patient (as will sometimes be the case) cannot eat without drinking, you may allow her a tumblerful of toast and water, hot as she can take it; this may stimulate the stomach, increase the flow of gastric juice, and in that way favour digestion. For breakfast I would recommend black tea, as preferable to coffee, cocoa, or chocolate: as drink, bottled ale or porter may be taken, if found to agree with the stomach, as this beverage seems to be of service in supporting the system when suckling. Spirit diluted

with three or four times its bulk of hot water, I believe will be found a better drink than wine, which is apt to become ascendent: one or two table-spoonfuls of spirit, rum or brandy, for example, will be sufficient, properly diluted, for the twenty-four hours; and this quantity should not be increased without urgent necessity. The cold shower-bath will be found very useful, or sea-bathing may be used instead, provided the patient can bear it. Should the function of the liver or other chylopoietic viscera be deranged, blue pill at night, with laxatives on the following morning, will be found of service. If the secretion be merely deficient, chalybeates, stimulants, and occasional laxatives may be given with advantage. The following may be tried:—

R. Ferri sulphatis, ʒss.

Gummi myrrhæ,

Aloes socot: a. a. ʒi. Misce,
et divide in pilulas xxx.

Three or four of these pills, taken daily, will often be found highly beneficial: should they act too much on the bowels, three grains of sulphate of quinine may be combined with two grains of the sulphate of iron and as much powdered capsicum as will cause a sensation of heat in the stomach. The pills should be made as soft as possible; for, when hard, they frequently pass through the bowels unaltered. One or more of these pills, according to their effect, may be taken three times daily, half an hour before each principal meal, say at eight, two, and nine o'clock. The white mustard-seed bruised and given in doses of a tea or dessert-spoonful half an hour before each meal, will be found to have a very good effect: this increases the flow of gastric juice, and improves the powers of the digestive organs. Cubebs, balsam of coapiva, and the compound tincture of

benzoin, may be tried if the disease be of a mild character—each given according to the effect produced : of the cubebs eight or ten drachms may be considered a fair daily dose ; of the coapiva three or four drachms ; of the benzoin six or eight drachms. Patients labouring under leucorrhœa should avoid every kind of dissipation—operas, theatres, tea-parties, and other crowded assemblies are highly injurious : late hours must be avoided, and every attention paid to the chylopoietic viscera.

Local Remedies.—Astringent injections, properly used, will, I believe, be found of great service ; but without you explain fully to the patient the manner in which they are to be applied, she may go on injecting, month after month, without benefit. Solutions of alum, copper, zinc, or the decoction of oak bark, weak at first, but increased in strength as the parts will bear, may be thrown into the upper part of the vagina, six or eight times a day, by means of a syringe furnished with a tube of sufficient length, so as to reach the os uteri. The patient should place herself in the recumbent position, with the hips raised and the thighs a little separated, and, being furnished with a proper syringe, she charges it with injection, beginning, for example, with one drachm of alum to the pint of water, and introduces it to the upper part of the vagina ; then, gently depressing the piston, she empties the instrument, lying five or ten minutes after each time of using the injection, to prevent the fluid from immediately returning, which it must necessarily do if she resume the erect posture. Perhaps if the remedy was used in form of powder it might be more beneficial ; but the best injection I know of is that of Mr. Jewell, made by dissolving two scruples of nitrate of silver in twenty ounces of water,

but may be used stronger or weaker according to circumstances: the weakest that will stop the discharge is the best. This injection should not be used so frequently as the others—two or three times daily will be sufficient. You must also warn your patient to be careful, as the injection will stain, if allowed to run on the linen. This disease not unfrequently returns; if so, resume the treatment by which the disease had been cured before. The discharge seems to be secreted by the mucous membrane of the vagina.

LECTURE LIV.

Moles, Hydatids, and other Substances are occasionally formed by the uterus and vagina, together or separately, and either depending on, or wholly unconnected with sexual intercourse. Sometimes both womb and vagina secrete a *friable material*, by which both cavities become loaded, giving rise to forcing, bearing down pains resembling labour, with aqueous or sanguineous discharges from the womb, with occasional discharge of the material itself, varying in quantity from that of a drachm to several ounces. It seems, as far as my observations go—and I have examined one case with great care—to depend on a diseased secretion of the mucous membrane, resembling apthæ in the mouth. I believe these secretions are not uncommon, for I have seen several cases. Occasionally, *fleshy masses* are formed in the uterus, very much resembling the placental portion of the ovum in the

earlier months : in fact they are in some cases nothing more than blighted ova. They may, however, be formed month after month independently of sexual intercourse. Other substances, called *moles*, are formed in the uterus, varying much in consistence. In some cases they seem to be made up of layers of coagulable lymph poured out from inflammatory action. Others, again, are firm in their character, very much resembling polypus or schirrous tubercle. These substances are generally single, but occasionally they are several, varying in size from a hazel-nut to that of the foetal head, or larger than this. They may be connected, more particularly if of firm consistence, by cellular web and blood-vessels simulating the connection between the ovum and uterus, but are easily detached. Schirrus of the womb or ovary, or both, may be combined with this disease. The womb also is liable to the formation of *hydatids*, varying in their size and number : they may be few and small, but they may also be of large size, and in great numbers, so as, when expelled by the uterine efforts, to fill a large washhand bason. Hydatids formed in the uterus differ from those in any other part of the body in being joined together by a peduncle, and united to the uterus by a kind of stalk, on the whole very much resembling a bunch of grapes. These, like the former substances, may exist (as we know they are formed in other parts of the body) independently of intercourse, but are generally, I believe, the result of impregnation. When hydatids form in the ovum they are very small at first, but increase very much in size, the ovum being more or less destroyed by them. I have seen the disease in all its stages : in some, although the hydatids were large and numerous, much of the ovum remained ; in others, the mass expelled seemed

to be the ovum ; but on cutting into it, a large quantity of hydatids were found contained within.

The *Treatment* required in this disease is simple. If the woman suffers no inconvenience from these hydatids, the less you interfere the better. Avoid giving any medicine likely to produce powerful effects. If you have urging bearing down pains, and the masses come away of themselves, don't interfere, for the parts are rigid, and you might rupture the vagina ; but if floodings occur to an alarming extent, you may, if the parts are lax, introduce the hand into the uterus, and bring away the diseased mass ; for although this operation is one of danger, yet less in these cases of floodings than if the womb was left to expel the mass unaided. The treatment of moles resembles that of hydatids : if the patient have no urgent symptoms, don't interfere ; if pains occur without flooding, allow the uterus to expel the mass by its own efforts ; but if alarming floodings occur, you must, if possible to be done with safety, introduce the hand and bring away the mass, not forgetting to employ those means previously recommended in flooding cases. Dangerous floodings, however, are not, I believe, frequent in these cases.

On the Signs of Impregnation observed in the Ovaries.—The ovaries, like the uterus, vary very much in size, being two or three times as large in some women as in others : they resemble very much the testes of the male, and hence have been called the *Testes Muliebres*. They are smooth and polished on their surfaces in some—rough and globular in others. You may find their surfaces unbroken and without any appearance of cicatrix ; but in other cases you meet with small wrinkled scars on their surface, resulting from impregnation, though not, I believe, in all cases. I

conceive, independently of this, these vesicles may be broken as from strong excitement. The external or peritoneal covering of the ovary may be thin and transparent, or it may be thick and opaque. In many of the mammiferous animals, the sow for example, these vesicles or eggs can be seen rising above the surface of the ovary, or imbedded, yet seen distinctly in a somewhat circular form in the body of the ovary, as in the rabbit. In the human ovary these vesicles cannot in general be seen without they are very plump, and the surrounding membrane unusually thin: the bulk of the ovary is made up of cellular membrane, varying in texture, well supplied with capillaries. In this membrane there presents three different bodies, varying in colour, namely—the corpora serosa—the corpora livida—and the corpora lutea.

The Corpora Serosa—filled with a fluid apparently serous, vary in size from a millet seed to that of a pea, and in number from five to fifteen. The membrane forming the syst is sometimes thick and coriaceous; at other times thin and membranous, and furnished with very delicate capillaries, carrying red blood. These vesicles are found in childhood as well as the middle age; but I am not certain whether they exist in old age. Besides these imbedded vesicles, there are others found connected only at the margins of the ovary, or perhaps completely detached from it, lying between the folds of the broad ligaments at the distance of one or two inches, and of the size of a large pea, so that these bodies may be divided into imbedded, marginal, and detached. The larger vesicles seem to be in a state of incipient dropsy.

Again, besides these, other substances are formed in the ovary, called *corpora livida*, varying in size

and colour ; some are empty, but covered over with a dark red colour ; others are filled with a clot of blood of a very dark colour : others again are mere molecules, varying in tint from red to nearly inky blackness, and may be divided therefore like the former, into three kinds—those charged with blood—those empty—lastly, those of various tint. Several of these bodies may exist in the ovary, at the same time they seem to be caused and to derive their colour from the rupture of some vessel.

Corpora Lutea.—The last of which we have to speak, are found in the ovary, varying very much in size, and also in colour. Some are not larger than a mustard seed, and require searching for ; others, large as a pea or kidney bean, are made apparent as soon as the ovary is laid open. Their colour is generally either of a bright lemon colour, or of the darkest orange tint. Sometimes you meet with mere specks or points, of a bright yellow colour, forming the first variety of these bodies. In other cases, you meet with vesicles larger than the former, being about the size of a millet seed, or small pea, and often, I suspect, hollow, covered over with a yellow coating, varying in tint. Again, you meet with solid bodies of larger size and yellow colour, varying from that of a pea to a kidney bean ; and of these solid bodies there are two kinds—the fabiform and the spheroid. Of the tint of the spheroid I am not certain, but I believe it is more or less yellow ; they contain within them a globose cavity ; the surface of the substance exposed by section all around the cavity, presents a striated appearance, and has a somewhat fibrous look.

The fabiform bodies are more interesting, and also more frequent. They resemble, when divided, the half of a kidney bean, and contain within them a

shallow cavity resembling the printer's asterisk. (*) Their colour is yellow, but varying from the light yellow of the lemon to the more dark yellow of the orange. When the ovary is well injected the yellow mass being full of vessels, becomes of a deep red tint. These fabiform bodies constitute what are properly called corpora lutea; and generally, if not always, you will find a small wrinkled cicatrix on the surface of the ovary directly above.

The ovary having been described as far as regards the obstetrician, we now come to the consideration of the means of discriminating on those appearances of the ovary, which are or which are not, to be looked upon as indications of fruitful intercourse. Of all the appearances enumerated the wrinkled cicatrix, and the yellow colour of the substance are alone to be considered as indications of impregnation; and even the cicatrix with the conjunction of corpus luteum, is not to be regarded as any indication of either intercourse or impregnation—it certainly renders it probable that rupture of one of the Graafian vesicles had taken place, but this may occur independently of intercourse. I think you ought to place no reliance on these wrinkles and cicatrices. The solid bodies themselves are not indiscriminately the marks of intercourse: those only last spoken of are worth notice, and of these the fabiform only deserve attention. I will not deny the striated spheroids may be produced from impregnation, but at present we have no proof of this. Of the fabiform bodies, those only of large size are to be depended on, as indications of intercourse and impregnation; if about the size of a pea, and above this size, they are deserving of attention. The smaller are not to be trusted, for I have a preparation of the ovaria taken from a girl under seventeen years of age, with the hymen unbroken, and the

womb free from every trace of pregnancy, yet corpora lutea are formed, three in one ovary and one in the other, but they are not larger than millet seeds. If combined with these large bodies, you have a cicatrix situated above the mass, the indications of impregnation may be regarded as pretty certain; yet these are not perhaps certain signs, at least in animals, for according to M. Saumarez the corpora lutea may be made to appear in the ovary of the rabbit from keeping the male and female within sight, but avoiding communication; and in the experiments of my own, I found that corpora lutea were formed in large numbers, and of great size, possessing all the characteristics of those of pregnancy from intercourse with the male, although impregnation was utterly impossible. If, therefore, corpora lutea can form in the rabbit from intercourse without impregnation, or according to Saumarez, without coition, from the mere excitement of desire, it is not improbable that this may occur in the human ovary, but that this is so I cannot take upon me to decide. We may, therefore, in the present state of our knowledge, look upon these vesicles and cicatrices as strong presumptive signs of pregnancy, yet not perhaps infallible.

LECTURE LV.

On Hemorrhoids.—Women not unfrequently become the subject of hemorrhoids; they have tumours lying external and within—hence the division of the disease into external and internal. The causes of this disease are various, but the principal cause of internal piles seems to be an expansion of the inner membrane of the rectum; it becomes thicker and broader,

and spreads out. The veins are often varicose, and the part is liable to occasional inflammation and tumefaction: when all this occurs, and the inner membrane of the bowels descends, either during the evacuation of the contents of the bowels, or at other times, a fit of hemorrhoids may be said to exist, and a tumour appears at the verge of the anus, sometimes the size of a pullet's egg or larger, and this may either continue to lie forth, or it may (as in most cases) be readily reduced by pressure of the fingers. The intumescence of internal piles seems to be produced at first from elongation of the delicate skin surrounding the verge of the anus. Secondly, from the varicose state of the veins. Thirdly, from the tumefaction of inflammation, adhesive matter may be thrown out and become organized, laying the foundation of a permanent tumour, larger or smaller, according to the inflammation. When the patient is not labouring under a fit of the disease, the expanded integument may contract—the vessels shrink—and the inflammation ceasing, the swelling subsides; and thus the appearance of the disease may in good measure disappear. In general, hemorrhoids are a solitary disease, impairing the health if severe, but not necessarily destroying life; yet we now and then find it combined with other diseases of a graver character, as schirrus or stricture of the rectum, prolapsus, or procidentia of the womb, not to mention other diseases of less importance; remember this therefore when investigating the nature of the disease. The patient may labour under a fit of hemorrhoids for several weeks, and then be totally free for a considerable time. As with the catamenia, so with the gut (though less frequent) an evident transfer of action from the head to the part now and then takes place; previous

to the attack, the head may have been giddy, as in amenorrhæa ; yet, when the piles come on, all cephalic symptoms may cease, as in a flow from the uterus. Under an hemorrhoidal attack patients are sometimes affected with tumours without bleeding, accompanied with shooting pains, and causing much distress to the patient ; this form of the disease constitutes what are called blind piles by the lower classes of society.

In other cases where there is a smart attack, you have a discharge of blood from the bursting of one or more of these varicose veins or arteries of which the tumour is in great measure composed ; the quantity of blood lost may be from a few ounces to a pint, quart, or more, causing collapse, but I believe rarely death. If external, the blood issues immediately ; if internal, the blood may coagulate in the rectum, and come away from the forcing of the patient, under a supposition the bowels want unloading, when she is greatly alarmed to find a large effusion of blood. If the attacks be of the milder kind, the health may remain unbroken, the flow greatly relieving the head ; but from frequent attacks and large losses of blood, the health of the patient may become very much reduced—debility, irritability, and dropsy ; nay, in some cases, death may be the result : this latter termination of the disease is, however, rare, although the health of the patient is often very much injured.

Treatment.—Your first endeavour must be to ascertain the attack does not depend on any other disease, some of which I have mentioned. Secondly—and of great consequence in this disease, whether combined or not with other diseases—that the bowels should be kept open ; for this purpose manna, castor-oil, rhubarb, magnesia, sulphur, and other mild aperients may be given ; and if the attack be of the milder kind,

it will be greatly relieved. Aloes, and other urgent cathartics, should not, without particular symptoms demand it, be given with the disease. If you have inflammation and swelling of the parts, leeches, cold water, and other remedies for checking inflammation, must be applied. A few punctures with a lancet takes away blood from the part, and often effectually relieves the piles. Sometimes there is a vast deal of pain in the pelvis, more especially about the gut. Hemorrhoids in this state may be called the irritable; and there is, I suspect, in many cases vertical fissure of the lining membrane of the anus.—If fissure exist, it may be made out by examination—if mere irritability of parts, leeches, and other similar remedies must be had recourse to—if you have great pain in the parts, opium may be taken into the stomach, or introduced into the rectum in the form of suppository: two or three grains of opium, and three or four of soap, will answer very well for this purpose: should this form cause pain and be rejected, the opium may be rubbed up with three or four drachms of mucilage, (not more) and used as an injection.

If the piles bleed largely, an examination must be made, either by getting the patient to urge the parts down, or if this fail, by the speculum ani. By passing a ligature around the bleeding parts, you effectually cure the disease, at least for a time: a painful yet not dangerous operation. Mr. Copland has applied ligatures to the mucous membrane of the rectum in more than two hundred cases; and I believe without the loss of a patient. You had better, however, try the other remedies first, as pressure, cold, &c.—Yet in some cases of bleeding piles, the hemorrhage had better not be checked, more particularly if any cephalic affections exist, which are relieved by the

bleeding, for apoplexy may be the result. The patient can often tell beforehand when an attack of hemorrhoids is about to come on, when you may, I believe, in many cases, totally prevent the attack by the application of ten or twelve leeches. If cephalic affections precede the hemorrhoidal attack, instead of applying leeches, I should prefer allowing the piles to bleed; but in the large majority of cases the head remains unaffected.

When piles become old and indolent, they lie about the entrance of the bowel; for the relief of this variety of piles, Dr. Monro used to recommend very much an ointment of powdered galls and spermaceti ointment, to be smeared over the parts twice or three times daily—the knife, I believe, is rarely required. When the hemorrhoids descend from within the bowel, and project beyond the anus, they ought to be immediately replaced: the most effectual method of doing this is to bear the piles upwards, and then let the patient lay as if the contents of the bowels were to be evacuated; this opens the anus, and the parts immediately ascend. If the patient retract the bowel at the moment of reduction, the replacement is rendered impracticable. Certain remedies have been recommended as specifics in hemorrhoids; of these sulphur copaiva, and Ward's paste, a spicy compound, are the principal.

Prolapsus Ani.—In this disease, a modification of internal piles, the mucous membrane of the bowels descends beyond the anus, one, two, three inches or more; it is much thickened, and the veins and arteries supplying it are very much enlarged, altogether forming a puffy mass, known at once to the sight or touch if previously acquainted with the disease. The most common cause of prolapsus ani is from habitual

costiveness and tenesmus. Naturally, as you see in the horse, the gut comes down a little way when the contents of the bowels are expelled; but, from hard and large accumulations of fæces, from the pressure these cause on the gut, and also from the repeated urging and straining on their passage, the mucous membrane of the bowel elongates, and at length protrudes so as to form the disease. In this disease there are two modes of treatment—the curative and the palliative.

Palliative Treatment.—The bowels should be kept moderately relaxed, and the evacuations pulpy instead of being hard and indurated: for this purpose manna, confection of senna, sulphur, rhubarb, or castor-oil may be given, so that the evacuation of the bowels may cause no efforts. The patient must be warned of the danger of constipation, and also to avoid urging during the evacuation of the bowels, for the descent of the inner membrane of the anus causes a feeling as if the bowels were not yet unloaded, and, by giving way to this, more of the part may be forced down. On no account, therefore, allow the urging to be continued after the contents of the bowels have been wholly or in a great measure evacuated. Warn your patient also of contracting the sphincter ani till the gut has been replaced, for this is chiefly a voluntary muscle, and if the bowel is beyond the anus it becomes strangulated from its contraction. The method of replacement I have already mentioned when speaking of piles. As soon as the parts are protruding they ought instantly to be replaced, to prevent any injury. Astringent washes and other remedies have been recommended, to strengthen and brace up the parts; but, except to amuse and sooth the mind of the patient, I believe they are perfectly useless.

Curative Treatment —In the more severe forms of the disease where the descent of the bowel is large, and there is also much bleeding, the general health being injured by it, and where also much pain and distress are produced, the patient becomes anxious for a radical cure. It has been recommended to remove the protruding parts with a scalpel or scissars ; but this is an operation of no little danger, and the patient may perish from subsequent hemorrhage. A safer and much more manageable operation is that recommended by Mr. Copland, of Golden-square. It is this : After the bladder has been emptied, and the bowels thoroughly evacuated, the patient forces down till she urges the mucous membrane of the bowel within sight, when the practitioner, inspecting it, discovers two, three, or more spots much redder than the rest, which are pouring out blood ; then taking a tenaculum, with the help of an assistant he draws forth this part, and, keeping it on the stretch, applies a silk ligature around, and ties up the part as tight as may be, cutting off one end of the ligature and leaving the other. If the whole can be contained within one ligature, so much the better ; if not, two or more may be applied in the same way, one end of the ligature being cut off, and the other allowed to hang forth at the anus. The patient is now directed to make an effort to open the gut, and the protruding parts, by the help of pressure, are replaced. After the replacement of the parts the patient must be kept perfectly quiet, and the bowels must be locked up, by means of opium, until the ligatures come away : opium may also be given at intervals if the pain be severe. No dangerous symptoms follow this treatment. After the ligatures come away, the bowels may be made to act by some aperient, castor-oil, for example. The first motion in

general causes great pain, but with each succeeding one the pain decreases, and at length the parts get well. The pain is sometimes very severe if the opium be not given sufficiently early and in large doses; but, according to Mr. Copland, who has operated on a vast number of cases, no urgent danger results; and he remembers no case that has had a fatal termination. The more the membrane descends, the more likely the operation is to succeed; for the cure seems to depend on adhesive inflammation fixing the mucous membrane of the rectum to the mucular tunic above; and the more the mucous membrane descends, the higher will it return when replaced—consequently the adhesion will take place some distance above the anus. If the adhesions are formed near the anus, there is some danger lest the parts should double over it and come down. In general this operation prevents all further descent and effusions of blood, although liable occasionally, perhaps, to failure. There is another form of the disease, consisting in fissures about the inferior aperture of the rectum, vertical or oblique, single or repeated. Patients labouring under this disease are often supposed to be suffering from uterine affection, as carcinoma, prolapsus, or other disease of the uterus. It usually comes on by paroxysms; the patient suffers much from central pains, of a shooting, throbbing, urging character, not easily described, in the sacrum and above the fold of the thigh, with frequent desire to pass her urine—relieved sometimes by the recumbent position and approximation of the knees and bosom, much aggravated by the passing of large and indurated fæces, and perhaps first brought on from this cause. By careful examination the fissure is detected or the cicatrix of a former fissure; yet if the attention is not vigilantly alive you may long remain ignorant of

the disease, supposing the patient to labour under prolapsus, cancer, irritable piles, affections of the bladder, symphysis pubis, or other parts.

Treatment.—When the disease is once understood, the treatment is very simple—keeping the contents of the bowels in a soluble state, and directing the patient to apply some gentle stimulus which may encourage the healing process: the unguentum hydrargari nitratus is the best I know; it should be applied diligently and frequently to the part, say three or four times a day. This disease, like the former, comes on by fits: after an attack the patient may remain comparatively well for weeks together.

LECTURE LVI.

On Menstruation.—Women, during the child-bearing period, are liable to a periodical discharge from the uterus, constituting what is termed Menstruation. In most women this discharge occurs every four weeks; in others, every calendar month; in others, every three weeks; in others, though but seldom, every five weeks. The quantity varies much in different women: in thin, pale, and delicate women the discharge is very copious, but more sparing in the robust—the average quantity is, I believe, about five or six ounces. This discharge is of a red colour, and bears a strong resemblance to blood, but it contains no coagulable lymph. If obstructed from imperforate hymen or other causes, it becomes viscid and thick as treacle; but it does not

separate like blood into serum and crassamentum, although it may have been detained months or years : by this characteristic it may be distinguished from floodings. Prior to the flow of this discharge women are assailed with certain uneasy symptoms, as pains in the head, breasts, hips, back, and extending down the thighs, and, if violent, constituting the disease called Dismenorrhea. The discharge seems to be produced from the mucons membrane of the uterus, secreted, according to Dr. Hunter, by the arteries of the part. In a case of inversion of the uterus the discharge was observed by Dr. Clarke to issue like perspiration through the pores of the skin. I have said this discharge is proper only to the child-bearing period. It begins to flow at various periods in different climates. In India, Arabia, and the East it comes on about the age of ten, ceasing about thirty. In the more northern parts towards the Pole the flow does not begin till about the age of eighteen, ceasing about fifty. In this country it begins about the thirteenth or fourteenth year, and ceases about the forty-fifth : the sooner it begins, the sooner it ends ; and vice versa. When menstruation is suspended, there is often a discharge from some other part. In a woman at St. Thomas's Hospital, who came under my notice, I observed, at least three times in succession, a discharge from a sore on the hand every three weeks, instead of a discharge from the uterus—being the period to which the patient had been previously accustomed to have the flow of the catamenia ; and in this case, two or three hours before the commencement of the eruption, a throbbing was felt in the course of the radial and ulnar arteries. Further, although I am not prepared to assert that in menstruation the uterus under procidentia always doubles in size, yet, in one in-

stance at least, I know that a great increase in the bulk of the uterus occurred, I think I may say regularly, and the womb might be felt to throb; and hence, laying these facts together, we may, I think, venture to infer that, whatever may be the cause, month after month, of the topical increase of vascular action in the menstruating vessels, it is the determination of blood to the uterus produced by this topical excitement of vessels which gives rise to the discharge. These excitations and congestions are perhaps allied in their nature to the congestions and excitations observed in the genitals, the breasts, nipples, and the appendages to the heads of the common fowl. When women are led, from disease, to examine the uterus, they sometimes imagine it is larger during menstruation, or immediately before. Probably this remark is correct. During the action of the uterus, or just before it, the bosom often swells and becomes more tender and firm. As a general rule it may be said that, during pregnancy and the period of suckling, the flow of the catamenia is arrested: yet there are certain exceptions to this. I have known several cases where the discharge continued to flow through the first three or four months of pregnancy, and one case as late as the eighth; but in general the discharge is more sparing, and continues for a shorter time. In some rare cases the catamenia continues to flow during suckling: more commonly it comes on after about twelve months' suckling, although the child still continues at the breast: hence we must not hastily infer a woman is not pregnant merely because she menstruates. The flow of the catamenia may cease altogether, producing the disease called Amenorrhæa, or the discharge may be in too large quantity, called Menorrhagia; or, lastly, you may have violent pain

about the centre of the pelvis, accompanying the discharge, called *Dysmenorrhæa*. Of *amenorrhæa* there are three varieties: the first, that which is produced from defective organization; the second is that arising from a want of power in the system, causing chlorosis, as it is called; thirdly, in the adult you may have *amenorrhæa* from cold, damp, &c. If no ovaries exist there is no catamenia: this defect of organization is known by the changes of puberty not taking place—there is no swelling of the breasts, no widening of the hips, no enlargement of the external genitals, nor any desire for intercourse; and if you examine internally, the uterus will either be found wanting, or very small, a mere vestige. Again, the want of discharge may be from the vagina being imperforate either at the upper part or throughout its whole length: this may either exist from birth, but more commonly from adhesion of the sides of the vagina from inflammation, or slough of the mucous membrane. It may happen in virgins, but more commonly occurs from laborious parturition. If the vagina be imperforate throughout its whole extent it admits of no remedy—indeed no catamenia will form: if only partial, the disease admits of remedy, and may be treated as imperforate hymen; but as the operation is more difficult, I would advise you to wait, and allow the catamenia to accumulate to the extent of two or three pints, that the vagina may become dilated, and the parts being borne down, the operation becomes easy, provided the surgeon possesses ordinary dexterity; but if the parts are attempted to be laid open before the accumulation of the catamenia, the operation is one of great difficulty, for the knife may not improbably penetrate the rectum, bladder, or the parts interposed. If the vagina has been impervious from birth, it is very pro-

bable that there is a want of either ovaries or uterus; or schirrus or dropsy of the ovaries may be combined with this disease. If you operate before there is any distention of the parts, you run a risk of operating needlessly. Examine by the rectum, to find if the upper part of the vagina joins with the uterus. More commonly, however, the catamenia accumulates from the hymen being imperforate: you have all the signs of puberty, but no red discharge from the genitals: at first the patient is supposed to labour under chlorosis of the ordinary kind; you give medicines for that disease, but to no purpose: the health is usually not much injured: month after month you have pains about the pelvis, and other symptoms; and should the disease be suspected, and a careful examination instituted, it is at once discovered; if not, by and by the abdomen increases in size, and a second error may be committed—the case is supposed to be pregnancy—a mistake more easily committed in the advanced state of the disease, for, month after month, the abdomen enlarges, till at length it acquires the bulk of a nine months' pregnancy: after a time, pains resembling those of parturition come on—at first cutting, grinding, and lancinating, but afterwards change to forcing, bearing down pains. If the examination be carelessly made, the protruding hymen is mistaken for the head of a child; but, from increase of the pains, this membrane bursts, and instead of a child, the obstructed catamenia gushes away; so that here is a third error you may fall into by mistaking the case. The disease, however, if discovered, is easily cured by taking a scalpel, and dividing the hymen in several directions, and then taking a syringe with a long tube and washing out the parts with warm water; for the catamenia, occasionally as thick as treacle, from ab-

scorption, becomes putrescent and very offensive. The parts must be dilated by means of tents or bougies. If, however, puerperal fever is about at the time, delay the operation; for it has been observed, that symptoms of puerperal fever have come on from this operation when the disease has been prevalent: two cases of this kind are mentioned by Denman, and I have heard of one occurring at the London Hospital a few years ago; but by vigorous measures the woman was saved. Again, it sometimes happens that women are formed destitute of uterus, or, more commonly, have had it removed by ligature or otherwise, as from chronic inversion or other disease. After the complete removal of the uterus, no catamenia can be expected, except perhaps a little show, the vagina (menstruating vicariously, as it is called) taking upon itself the office of the uterus. In those cases of extirpation of the womb that have come to my knowledge the catamenia ceased to flow, or there was merely a show. But it deserves remark, that, from removal of the uterus and the cessation of the catamenia, there may be a determination of blood to some part—the head in particular—rendering the operation of bleeding or cupping occasionally necessary; otherwise the woman enjoys good health, and often becomes plump and fat. It may be added, however, that this determination of blood to the head is not so great as we sometimes find it in women whose structure is complete, and in whom the cessation has been produced from other causes.

LECTURE LVII.

On Leucophlegmatic Chlorosis.—You will occasionally have patients brought to you in whom the catamenia has ceased to flow, or it may have not appeared at all : the health has given way, and you find the patient (perhaps a girl sixteen, seventeen, or eighteen years of age) with a pale, sallow countenance, the abdomen distended from flatulency, the lower limbs occasionally swelled ; there is great nervous weakness, with lassitude of the muscular system ; an inability to move across the room, with palpitation of the heart on ascending the stairs, which seems to them a Herculean task ; the bowels are torpid, and the stools in general of a dark green olive colour.

Treatment.—In these cases it is of great importance to attend to the chylopoietic viscera, stomach, liver, and bowels. Your first treatment, therefore, will be to clear out the alimentary canal by purgatives, to get it if possible into a healthy state : emetics have also been recommended for this purpose, but are not now much used—if you try them, the ipecacuanha will be found the best. By Dr. Hamilton we are recommended to give large doses of purgatives, day after day, until the bowels shall resume their healthy functions. In general this plan of treatment will not be found necessary : keeping the bowels open two or three times a day with the infusion of senna and salts, or the compound decoction of aloes, giving the blue pill every night or every other night, will be found more useful ; if the countenance is pale and sallow, the mercurial must be given till it slightly affects

the mouth. Our next object must be to improve the blood. The very look of the girl shows the want of the red particles of the blood—the pale and sallow complexion, the white tongue and gums. It is this also that seems to be the cause of the great weakness of the patient, and her unwillingness for motion. Now, with a view to augment the quantity of the red particles, we may allow the patient wine or porter: three or four glasses of port wine, or a pint or pint and a half of porter, may be taken daily. But I believe you will find more service from the following:—Allow the patient four meals a day—breakfast at eight or nine o'clock, dinner at one or two, tea at five, and supper at nine or ten. Half an hour before breakfast the patient must take a tablespoonful of unbruised mustard-seed. For breakfast, black tea and milk, in equal parts, with stale bread and fresh butter, or dry toast and a thin slice of fat bacon, toasted before the fire, not fried, or a new-laid egg may be taken instead. Two hours before dinner all the drink wanted must be taken—ginger-beer, table-beer, or toast-water, are to be preferred: half an hour before dinner the mustard-seed must be repeated, to increase the flow of the gastric secretion. At dinner the boiled meats are to be preferred to roast, the white meats, including fish, to be preferred to the red; the food taken must be well done, and the inside will be found better than the outside; potatoes to be preferred to every other vegetable. The food should be well masticated, and eaten slowly. Good Cayenne pepper must be taken with the dinner, so as to warm the stomach and produce slight pain. Not a drop of any kind of drink should be taken. If pastry be eaten, it should be boiled. After dinner, oranges or figs may be allowed. The tea to be similar to the breakfast. The supper must

be in the form of a light dinner, or, what is better, a slice of bread and butter. On going to bed, a tablespoonful of spirit may be taken, with some spice, mixed with three or four tablespoonfuls of hot water. I prefer the Geneva, as it contains the juniper.

Medicine.—Besides increasing the quantity of the red particles of the blood, we may try to invigorate the system by means of tonics: bark, or aromatics may be tried; but the preparations of iron I would more particularly recommend. Griffith's mixture may be given, but it is rather bulky, and sometimes offends the stomach. In my own practice I usually prefer giving the iron in the form of electuary:—

R. Ferri subcarbonatis, ʒiv.

Gum: myrrhæ,

Pulvis rhei:

Pulvis cinnamomi C: a. a. ʒi

Conf: aurantii, ʒi.

Syrupi ejusdem, q. s. Misce, et fiat elect:

A piece the size of a nutmeg to be taken night and morning. If, as it sometimes happens, the medicine is too aperient, the rhubarb must be omitted. If the electuary be objected to, the following draught may be given:—

R. Vini ferri, ʒiv.

Tinct: cinnam: c:

Tinct: cardam: c: a. a. ʒi.

Aquæ distillatæ, ʒi. Misce. Fiat haustus.

To be taken twice a day—at eleven in the morning and four in the afternoon. The iron may be given in the form of pill:—

R. Ferri sulphatis, ʒi.

Gummi Myrrhæ, ʒi. Misce.

Fiat pilulæ x.

Two to be taken night and morning; but they are

not so powerful as the other preparations, and are apt to become hard and pass through the bowels unaltered. Sending the patient to the sea-side or into the country, if she reside in the midst of a large town, will go far to invigorate and restore the health: Tunbridge Wells or Cheltenham are perhaps the best places of resort in these cases. The shower-bath, or sea-bathing, if it agree with the patient, will be found an excellent adjuvant. If, however, instead of a healthy glow all over the body, the patient is cold and chilly, and complains of local pains, it must be left off: it is doing harm. In general there is no occasion to have recourse to emenagogues; but if the discharge does not return they become necessary, and must be used.

Amenorrhœa.—Women in the full vigour of health may have the discharge stopped from some accidental cause, as fright, cold, &c. The health for the first month or two is not impaired, but after this time the patient becomes emaciated, sallow, and gets the chlorotic complexion; under the eye there is a circular blackness in the retæ mucosæ, the cheek-bones become prominent, the stomach and bowels become deranged, and the patient has irregular determinations of blood to different parts of the body, as the head, nose, lungs, and bowels—often to the head, causing pain, giddiness, and more or less dimness of sight; but there is very rarely any effusion on the brain: if the lungs, then you may have a large eruption of blood vomited up, and the patient is in danger of suffocation; the bleeding, too, from the bowels is more or less dangerous: if from the nose, there is nothing to fear: If there be any sores on the body, you may have discharges from them, but in general at no fixed time—occasionally, however, you may have the eruptions

from the sore the same time the catamenia used to appear (one case of which I have before cited), clearly showing the cause of the disease.

Treatment.—In this disease, as in the former, we must begin by improving the health, and by the same remedies—diet, medicine, country air, &c. If there is a determination of blood to the lungs, the patient must be bled from the arm before the time of its coming on, and the warm hip-bath may be used, with diaphoretics, to equalise the circulation. If the head be affected, blood may be taken from the nape of the neck by cupping, leeches to the temples; the head must be shaved, and cold lotions kept constantly applied; or the shower-bath may be used all over the body, or merely to the head alone, eight or ten times a day; it causes no weakness. Purgatives must also be given, so as to keep the bowels thoroughly evacuated. Ale, wine, and other stimulants must be avoided. The pores of the skin may be kept open by the warm bath. As the health improves, the catamenia will very probably return of themselves; but occasionally, although the patient is perfectly recovered, the discharge fails to appear: we must then endeavour to excite the uterus to action by means of emenagogues. For this purpose an injection of the aqua ammoniæ puræ, twenty drops to an ounce and a half of water, may be thrown as high as possible into the vagina by means of a clean syringe furnished with a long tube. Should this injection cause pain, it is too strong—if no pain, it is too weak; but if it produce a feeling of heat and throbbing of the part, it is of the right strength, and may be used two or three times a day, increasing the strength when it fails to cause any sensation. If this fail, then the patient may be directed to sit in a bath of water as hot as she can

conveniently bear it for twenty or thirty minutes together every night, for five or six nights in succession, and after being wiped dry, she is to be well wrapped up and placed in a warm bed with a bottle of hot water at her feet. Aloes may also be given, five or six grains for a dose. The best time for these remedies is when the health improves, and the patient has the central pains and other feelings as if she was going to be unwell. Madder, black helebore, secale cornutum, emetics, and electricity, have been recommended and may be tried: from the latter Dr. Denman thought he had seen benefit derived in several cases. It has been proposed, when the catamenia seems disposed to flow, to apply a tourniquet to each thigh to intercept the flow of blood through the femoral arteries, and occasion an accumulation in the vessels of the uterus and a consequent eruption of the catamenia, but I think this is rather a plausible than a practical remedy.

LECTURE LVII.

On Menorrhagia. — When women are attacked with a very abundant discharge from the uterus independently of organic disease, it is called menorrhagia, and of this disease there are two varieties:—the active and the passive. The active form is more apt to occur in stout robust women who have received some great agitation of mind, from some domestic calamity, as the death of a relative or friend, for example. The discharge sparing,

or more copious, may occasionally occur at the menstrual period, but in general it is preceded with a hot dry skin, the tongue covered with a white fur, the pulse greatly increased in frequency and force, and the action of the vessels greatly increased, followed by a discharge of blood ; if only one eruption, it is seldom of much consequence, but in general there are several, with a continued draining between each, which tends greatly to weaken the patient : she becomes cold, pale, and feeble, resembling very much a patient who has lost repeated quantities of blood from hemorrhoids, or frequent miscarriage, the disease passing into the passive stage.

Treatment.—One of the first steps to be taken consists in the abstraction of blood from the arm, more especially if the patient be plethoric, to the extent of ten or twelve ounces ; or should this be inadmissible, ten or twelve leeches may be applied to the symphysis pubis, or to the orifice of the vagina ; poultices being afterwards applied over the orifices so as to increase the flow of blood, or blood may be taken from the loins by cupping. You may sometimes prevent this menorrhagia, by taking away a small quantity of blood from the arm just before the catamenial period. We must also endeavour to lower action by refrigerating remedies ; if the bleeding be very severe, vinegar and water may be applied to the lower part of the abdomen, by means of napkins, as recommended in flooding cases ; or cold water may be thrown into the rectum by means of a syringe or elastic bottle three or four times a day ; about half-a-pint may be thrown up each time. The sulphate of soda or magnesia may be given, as they greatly tend to lower action, but not so as to act very much on the bowels ; one drachm will be a sufficient dose : nitre may also be

given. Again, in these cases digitalis may be of great service; but as it is apt to accumulate in the system, the patient must be carefully watched during its administration, and should she complain of sickness, vertigo, or other symptoms, it must be immediately withdrawn. Further, diaphoretics, so as to act on the skin and equalize the circulation, will be very beneficial; for this purpose, six drachms of the liquor ammoniæ acetatis may be mixed with the same quantity of water, so as to form a draught, which may be taken two or three times a day. Stimulants must be avoided, more particularly port wine, which women are very apt to resort to, either on account of its flavour, or with the hope of deriving benefit from its astringent qualities. Should these means fail you, mercurials may be tried; calomel, blue pill, or the hydrargarum cum cretâ may be given so as slightly to affect the mouth, when from its action on the capillaries the morbid excitement existing in the vessels of the womb may be removed.

Passive Menorrhagia.—In this form of the disease there is no increased action; the patient is cold, pale, and so debilitated, that she has great difficulty in moving about, or is confined altogether to her bed. If the disease be very mild, tonics may be of service: bark, bitters, aromatics, and port wine may be given. If, however, the bleeding is obstinate, the acetate of lead may be given in grain doses, with a quarter of a grain of opium each; six grains or more, if necessary, may be given in the form of pill or mixture in the twenty-four hours; six grains is an average quantity. If the patient should be assailed with cholic pains, the lead must be immediately withdrawn; if the discharge diminishes, leave off the lead; or if you have given it to the extent of half a drachm or two

scruples, leave it off, whether the discharge has diminished or not : it is a dangerous remedy, and ought never to be given without absolute necessity. In these cases I have found mercurials very useful when given so as just to be felt in the mouth. When the sub-maxillary glands become tender and slightly enlarged, the gums a little sore, with an increased flow of saliva, not amounting to salivation, I have found the hemorrhage cease and not return. Again, the hemorrhage is sometimes in large quantity, greatly endangering the life of the patient, rendering the operation of plugging the vagina, as formerly recommended necessary. A silk handkerchief, tow, or other soft substance may be introduced into the vagina so as slightly to distend it : this will allow clots to form on the mouths of the bleeding vessels ; if possible, the plug should be left in the vagina for several hours, or you run great risk of disturbing the clots and renewing the bleeding. In some women, however, the vagina is so irritable, that a plug cannot be borne ; here the topical use of cold must be tried, napkins sprinkled over with vinegar and water may be applied over the orifice of the vagina, and around the hips as directed in flooding cases, or cold water may be injected into the rectum ; where the bleeding is obstinate, not in large quantity, but reducing the strength of the patient, you may inject the uterus itself. A syringe, or what is better, an elastic bottle, may be fitted on a long tube like a catheter, and about an ounce of cold water may be injected into the uterus ; if this fail, you may employ a solution of a drachm of alum in a quart of water, not stronger ; this may be injected slowly and with caution, two or three times a day. Dr. Haighton found this remedy of great use in several cases. Under the action of the alum you will sometimes find in

the course of a few days the woman has pains like those of parturition, and that a quantity of clotted blood comes away, which may cause great alarm ; this, however, is nothing more than the blood coagulated by the alum, and is to be regarded as favourable rather than otherwise, as showing the injection has been thrown into the uterine cavity, and that the womb is contracting. These injections ought to be continued for two or three weeks, and if even after this time we are gaining ground, we ought to be satisfied. In cases of passive menorrhagia, nourishment must not be forgotten. Transfusion in some rare cases may be required ; indeed, I know of one case in which the woman labouring under this disease was sunk so low, that a further gush from the uterus destroyed her, and this too without any traces of organic disease : now in this case, I think there can be little doubt but that transfusion might have been employed with the best effect had the remedy been at that time understood. The uterus I believe is generally larger under this disease than natural. In one case that I examined after death, I found the uterine cavity larger than it ought to be, and the uterus itself of increased size, as if there had been a great determination of blood to the part ; the inner membrane was very vascular, but without any traces of organic disease—merely distention of the capillaries. During life, I have repeatedly examined the uterus under this disease, and have generally found it soft, more or less open, and two or three times larger than its natural size. These enlargements are generally connected with preceding miscarriage. Occasionally the uterus will be found of its natural size under this disease. In both forms of menorrhagia, whether active or passive,

beware of over activity in your practice, for it is not improbable that in most cases the disease will get well of itself sooner or later, say at the end of two, four, or six months, consequently there is less occasion to have recourse to violent remedies. Again, in treating both forms of menorrhagia, it is of the utmost consequence in your diagnosis, that you should ascertain by the most careful investigation whether the patient be pregnant or not, or whether she labour under any organic disease, as schirrus, cancer, polypus, hydatids, or moles. If the woman be between the age of twenty and thirty-five, the high probability is, that no organic disease exists; or if so, it will most likely be found to be polypus. Pregnancy will generally be distinguished by the ordinary signs, by careful examination, and by the age of the disease compared with the bulk of the uterus. Hydatids are not easily detected at first, but sooner or later will be recognized by the signs of pregnancy—by the sudden enlargement of the uterus—by occasional gushes of water, and by the escape now and then of a delicate membranous syst, consisting of a ruptured and detached hydatid. Cancer or schirrus, whether tubercular or diffused, will be best made out by careful examination, as explained at large in a former Lecture. I know of no other certain method in these dubious cases. Polypus of small size within the cavity of the uterus, and not to be detected by the touch, may produce much pain and flooding, but these cases are very rare. Ordinary polypus growing from the neck or mouth of the womb, or upper part of the vagina, or even those growing from the uterine cavity, if the os uteri is somewhat expanded, may readily be distinguished by the touch. Rings of con-creted blood, or annular coagula, as they may be

called, formed occasionally by consolidation round the body of the polypus, may now and then demonstrate its existence. Moles, when small and in a close shut uterus, may not be discoverable, but like polypi in the uterine cavity, are of rare occurrence; sooner or later they may be detected by uterine pains, by some protrusion at the mouth of the womb, and by an obvious enlargement of its bulk. Of course we must always carefully distinguish between the active menorrhagia and the passive; and this distinction will, I conceive, be easily made out by means of the diagnostic characters of the two diseases already given. Cases now and then occur in which the diagnostics cannot be readily made out; in these cases you will do best to treat the patient on those principles previously laid down for the management of flooding cases, abstaining from all the more decided measures, until in the progress of the case the nature of the disease is better understood: one or two months make great changes in the diagnostics.

LECTURE LVIII.

Dysmenorrhœa.—Women, during the period of menstruation, always suffer more or less pain, but in some cases the pains are very severe, resembling those of parturition felt about the centre of the body, in the back, hips, loins, and front of the abdomen, extending down the thighs. The disease is not of an inflammatory character, yet you have the abdomen

very tender on pressure: in general you have no delirium, except anodynes have been given. Irritation of the bladder, with an imperfect flow of the catamenia, are common in this disease. The catamenia may continue to flow three or four days or more, and during this period the pain may be severer at one time than another; it may also remit from one day to another, but generally terminates when the catamenial flow ceases. Although the pain in this disease is very severe, there is rarely any febrile excitement: if the patient be tolerably quiet, the pulse will, I believe, be seldom found above 100 or 110 in the minute: it seems to be a spasmodic or neuralgic disease—I believe the latter.

A woman labouring under dysmenorrhœa is not necessarily sterile, and if she should happen to become pregnant, although it may not prove a radical cure, yet it effectually relieves the patient for a time: while she is pregnant she suffers no pain, and she may suckle the child twelve or fifteen months afterwards.

There are no effectual remedies; æther, castor, valerian, opium, and camphor, may be tried. The warm bath 97° of Fahrenheit may be used two or three times daily, as it has a tendency to increase the discharge, which is often very small. If the abdomen be tender, leeches may be applied to the symphysis pubis or orifice of the vagina. The sulphate of quinine may be given in large doses between the attacks, or it may be taken eight or ten days before the attack is expected; ten or twelve grains or more may be given in the twenty-four hours, at the same time keeping the bowels open by mild purgatives. Electricity has been recommended by Denman to be passed through the pelvis. If the pains be very severe, opiate suppositories will be found to give relief;

These then are the principal remedies in this disease. Women affected with dysmenorrhœa are not equally fruitful as others not labouring under the disease. In some cases you meet with a second variety of dysmenorrhœa: month after month at the time the catamenia should flow, you have a membrane discharged from the uterus of various form, somewhat resembling the tunica decidua; it is rough and shaggy on its inner surface, smooth and polished on the external; it is of the shape of the uterus, and is expelled with pains more or less severe, and sometimes floodings. This disease bears great resemblance to miscarriage—the principal characters are the same; the pains, the eruptions of blood, the escape of the membrane, are enough in a country town to set every tongue in motion—perhaps the only peremptory and decisive difference between the two affections is, that in miscarriage there may be an embryo; but in membranaceous menstruation neither the embryo nor any of its parts are seen. This disease may occur in virgins, nor is it difficult in part to explain this. When conception and formation occur, the membrana decidua of the ovum is not formed by the rudiments, but is generated by the inner surface of the uterus, as proved in extra uterine pregnancy. This membrane is generated by the inner surface of the uterus independently of impregnation: the action therefore which produces this membrane is one to which the inner surface of the uterus is by nature prone; in generation this action is excited by the stimulus of the male fluid, but in this membranaceous affection it occurs spontaneously. I presume that the membrane is gradually formed during the intervals between the catamenial flow. This disease almost always produces sterility; always according to Denman, yet Morgagni relates the case of a Florentine lady who became pregnant, carried the ovum

three months, and then miscarried : during pregnancy, and for some months afterwards, she remained free from the disease : it however ultimately returned.

Treatment.—I know of no effectual remedy for this disease : bark, mercurials, bitters, the preparations of iron, myrrh, and alterative remedies, may be tried : a weak solution of the sulphate of zinc in camphor mixture, was recommended by Denman, to be thrown into the uterine cavity, who thought advantage was derived from it in some few cases.

Cessation of the Catamenia.—In this country, the catamenia generally ceases to flow about the age of five and forty ; in some cases, as early as forty, in others as late as fifty. In some women the cessation is very sudden ; more frequently, however, very gradually : the discharge misses a month, then returns ; misses a longer period, and so on, decreasing in quantity, and also in frequency, it finally ceases ; it may be a year or two before it ceases altogether : it is always better to be slow than sudden. As the cessation of the catamenia is a natural process, the system ultimately suffers little inconvenience, and the majority of women do well, yet sometimes they are assailed with various affections. Some women are greatly troubled with flatulency, inflation of the abdomen, with constipation and other dispeptic symptoms, requiring the use of carminatives, purgatives, and other similar remedies. Occasionally too, women suffer greatly from pain and uneasiness about the breasts ; at this time, too, it is said they are more liable to cancer of the uterus and mammæ. Women are also liable to low spirits and great distress about the head, pain and giddiness, with throbbing of the carotids, flushed face, and frightful dreams, from the determination of blood to the part.

Great attention must be paid to the patient's health, and means of purgatives, bleeding from the arm, leeches to the temples, cupping at the back of the neck, shaving the head, and the use of cold lotions, or the shower bath applied to the head alone, we may palliate the symptoms so as to give time for the system to accommodate itself to the change: these cerebral affections cease after a time, sometimes three or four years, and the woman generally does well; if the attack be very severe, blisters, issues, or setons may become necessary: now and then women become very corpulent after the cessation of the catamenia, sometimes producing great inconvenience, and therefore ought always to be guarded against. Spare diet, purging, exercise, and abstinence from all fermented drinks, as ale, porter, &c., will be found the best preventives. Some women, however, are so inclined to corpulency, that they will fatten on bread and water.

Tympanitis of the Uterus.—Women of hysterical habits are liable to tympanitis of the abdomen, womb, &c.: from the formation of air. Gas may collect in the womb in large quantities, so as greatly to enlarge the uterus, but I have never seen more than three or four ounces collected. These collections of gas cause pain and uneasiness from the distention of the uterus, which contracts and expels the gas, sometimes with a report more or less audible. By pressure above the symphysis pubis, the enlarged womb may be compressed and the gas expelled. The patient may be directed to retire and press above the symphysis, and partly by the hand, and partly by the muscles, the air may be in great measure expelled, though sometimes not very suddenly. I think this gas is secreted by the inner surface of the womb, as is that formed in

the stomach and intestines from the mucous membrane lining those cavities, and not from chymical action on the food taken. I have known the bladder contain air, probably produced in the same manner: sterility is not a necessary result from the secretion of gas in the uterus, for I have seen several cases of pregnancy following tympanitis, and I have known the disease occur three or four months after delivery; it chiefly occurs in married women.

Treatment.—Medicines are of no avail in this disease: perhaps during the paroxysm, a hollow tube, as a catheter, might be passed into the uterus and left there, so as to give vent to the gas. If the woman become pregnant, it will prove the best cure. This discharge of gas from the uterus may be distinguished without difficulty from those discharges of gas which issue from the vagina, when from disease there is a communication with the rectum.

LECTURE LIX.

On the External Organs of Generation.—Having concluded our remarks on the internal genitals, and the most important diseases to which they are liable, we now have to speak of the structure, actions, and diseases of the external genitals, including those parts lying in connection with them. On examining the external parts in their healthy state, we find situated upon the symphysis pubis, immediately above the genital fissure, an eminence covered with a capillary growth, called the *mons veneris*. This eminence is

formed in part by the ligamentous fibres of the symphysis pubis, and in part by an accumulation of fat and cellular web. Upon either side of the fissured passage, and forming it, are the *labia pudendi*, formed by a folding of the common integuments, somewhat coarse in stricture externally, but internally smooth and thin, greatly resembling the lining membrane of the mouth. Between the folds of the labia there is placed more or less of adipose substance: in advanced age the labia become wasted, but in young and vigorous women they are large and full. Situate between the labia pudendi and the anus, is the *perineum*—a part which I have had frequently to mention—formed by the inferior and back part of the vagina within, and of the common integuments, with a few stray muscular fibres without. The anterior edge of the perineum uniting the labia behind, is called the commissure—distinguished from the rest of the perineum by its greater tenuity: immediately above this part is a cavity into which the tip of the little finger may be passed, called the fossa navicularis, the commissure forming the floor of this hollow. On the birth of the first child, this commissure is generally torn through, and the cavity disappears along with it; yet the existence of these parts is not always a proof of previous childbirth, for I have known the commissure and fossa exist as perfect as formerly, although the woman had been delivered with the forceps, and that not without difficulty. On separating the labia pudendi, the more internal parts are brought into view, consisting of the clitoris—the nymphæ—the triangular space between the nymphæ—the meatus urinaris—the orifice of the vagina—the hymen lying in the vaginal orifice, and the carunculæ myrtiformes, which may co-exist

with the hymen. Situated on the rami of the ossa innominata, and close by the former, are the crura of the *clitoris*: also concealed from view, surrounding the orifice of the vagina externally, and seemingly for the purpose of erection and compression, is a large assemblage of blood vessels producing a plexus, forming as it were for the clitoris a second pair of crura. On each side of the clitoris, but more posteriorly, are placed the *nymphæ*, formed by the doubling of a prolongation of the delicate membrane covering the inner surface of the labia pudendi; between the folds is placed a vascular substance, increasing their thickness and general size. Between the nymphæ and an imaginary line drawn from their posterior extremities is a triangular space of smooth surface and great sensibility, and in the centre of the line forming the base of the triangle, and at the very point of the arch of the pubis, is situated the *orifice of the urethra*; immediately below this is situated the *orifice of the vagina*, the canal leading from the external parts to the womb. This orifice is sometimes in virgins so small as hardly to admit the finger, but in women who have borne a large family is often of large size. Partially closing the vaginal orifice is the *hymen*, a delicate, vascular, and even sensitive membrane, sometimes, together with the contiguous parts, suffering a good deal from pressure. There are two forms of this membrane, the one circular and with a central aperture capable of admitting the tip of the little finger; the other of a crescentic form, and lying in the posterior and inferior part of the vaginal orifice. There are other forms of the hymen, but these are of little practical importance; there is the imperforate hymen which closes the orifice of the vagina com-

pletely, and there is the cribriform hymen, containing a number of apertures like a sieve or a cullender.

Sometimes when the catamenia form, they become offensive, causing great distress of mind. Dr. Whiting related a case of this kind to me, and assigned as a cause that, sometimes at least, in consequence of a partial closing of the vaginal orifice, the catamenia could not escape readily during the menstrual period, and therefore, being retained, it became putrescent. By teaching the patient to use a syringe and warm water during the menstrual period, this little infirmity may be readily relieved for a time—marriage and child-bearing will do the rest. Situated beside the hymen, there are found little excrescences about the size of a pea, lying about the vaginal orifice, called the *carniculæ myrtiformes*. Their use is not known, but they are not always the remains of the ruptured hymen, for both parts may exist together.

It has often been a matter of inquiry as to the use of the hymen. It has been asserted that it is a sort of guard of virginity, and a test of its reality: this may be; but I am of Matthew Prior's opinion, that you should put a padlock on the mind, for if the citadel within is treacherous the hymen alone will prove but a poor protection to maidenhood. That pregnancy may take place with the hymen unbroken I am certain, having seen several decided cases of this; but that a well-formed hymen unbroken will prevent the entrance of the male organ into the vagina, there can be little doubt.

Pruritus of the Vulva, as it is called, is a disease of a very distressing character, and not of unfrequent occurrence. In this disease there is a great deal of irritation of the vulva, sometimes about the mons veneris,

and sometimes of the perineum and parts contiguous. Together with itching, there may be a smarting, stinging, and a feeling of acupuncture, or, as the patient may term it, as if pins and needles were piercing the part; the symptoms altogether being so severe as to destroy her rest at night and her comfort during the day: she cannot lie at peace in her bed, or sit at ease in her chair, from the harassing stings of this troublesome disease. This pruritus, when it is in its severer form, and more especially if unconnected with any other formidable disease, may arise occasionally from insects investing the capillary growth situated on this part. The application of the preparations of mercury, turpentine, tobacco, and so on, with removal of the hair, speedily cures the disease. Again, you may have pruritus produced by cutaneous eruptions: to be relieved by the various remedies for this disease—the preparations of sulphur, mercury, tar, &c. Pruritus may also arise from ascarides lodging in the rectum, for these worms often give rise to great irritation externally. Calomel and scammony in effective doses, injections of a strong decoction of worm-seed, or any very strong bitters, or turpentine made into a proper injection, will be found the most effectual remedies for removing these disagreeable tormentors. Pruritus may also arise from pregnancy, but as gestation advances the disease often ceases, or ceases after delivery. The patient is tormented, more especially at night; and a very effectual palliative for the itching consists in having a large vessel of cold water by the bed-side, and being furnished with a sponge, it must be dipped into the water and applied to the vulva, and renewed as often as it becomes warm. Again, from the irritation of a pessary, pruritus may be induced. Removal of the cause, with ablutions of

the parts, speedily cures the disease. Lastly, you may have pruritus arising, in its most severe form, without any obvious cause; and this seems to take place more especially about the time of the cessation of the catamenia. I have seen several severe cases of this form of disease, but cannot say I know of any effectual remedy. By way of palliatives, opium may be applied locally, with the preparations of tobacco, digitalis, lead, and the parts may be refrigerated with cold water. With a view of producing altered action, the different preparations of mercury may be tried. As a temporary palliative, blisters may be applied to the part. According to Dr. Haighton, relief may be expected while the blister is drawing. If the pruritus occur at the cessation of the catamenia, it has been recommended to take away blood from the arm every two or three weeks, to imitate the discharge of the catamenia, to which the itching is referred. I have had but little experience of this practice. I have tried very strong solutions of the nitrate of silver, which seemed to have great effect as a palliative, but failed in curing the disease. I am afraid all we can do, in the present state of our knowledge, is to palliate the symptoms, and trust to time for a radical cure. It may be materially relieved in a few months, but at the same time it may, to my knowledge, continue three or four years, or longer. Pruritus does not carry with it any disposition to cancer. Let your patient clearly understand this, that her mind may not be alarmed with needless apprehensions. It is not improbable that, although the pruritus may be felt about the vulva, the true seat of the disease may be in the inner membrane of the womb, as we find when the stomach is disordered there is itching of the nose, and when there are ascarides lodging in the rectum there

is often much itching of the perineum and contiguous parts. Perhaps if a fair trial was given to injecting the womb itself, the disease might be effectually relieved.

You may occasionally meet with cases of *sexual sensibility* to excess among your patients. Now, if this sexual sensibility of the vulva depends upon inflammation, it will be most effectually relieved by leeches, fomentations, poultices, and keeping the parts free from all acrimonious substance by frequent ablutions with tepid water. Sometimes, however, instead of inflammation, the disease seems to arise from mere irritability of the parts. To remove this, the antiphlogistic plan may be first adopted, and then the different preparations of opium, hyocyamus, tobacco, &c. locally administered in the form of ointment or lotion. When the seat of the sexual sensibility is in the clitoris, it has been proposed to extirpate it. In the extremest cases this has been done, and with success. There is a third variety of sexual sensibility, and this was shown to me in St. Pancras workhouse by Dr. Roots. The patient there laboured under a high degree of sexual excitement, of which she gave a very clear, yet modest statement: she did not appear by any means a depraved character. There was great excess of irritation, and, as I thought, an evident disposition to an unsettled mind, the case approaching to nymphomania. I am not acquainted with any effectual remedy for this variety of the disease. It may be worthy of consideration, however, should the patient manifest a disposition to derangement of mind—a dreadful malady—whether the ovaries might not be extirpated; which, I conceive, would cure the disease: in nymphomania, more especially, this remedy may be worth attention.

LECTURE LX.

On Inflammation of the Labia Pudendi.—The labia pudendi, in the vigorous and flourishing period of life, is, as before stated, sometimes loaded with adeps. Now, like the mammæ, the labia pudendi, though less rarely, are attacked with phegmounous inflammation, which, assailing the cellular tissue, tends strongly to the formation of matter; and on this I now proceed to offer a few remarks. When the labia are affected with phegmounous inflammation they may become twice as large as natural, or they may exceed these dimensions. In this state of enlargement the parts become red, painful, and very tender, so that the slightest pressure causes great uneasiness, and it is generally necessary to keep the limbs apart. The parts speedily run on to suppuration, so that in the course of six-and-thirty hours a great quantity of matter may be collected, and the abscess disposed to point.

Treatment.—If the patient be of a robust and plethoric habit, and you are called early, you may bleed from the arm, purge, give digitalis, and keep the patient on the strictest antiphlogistic plan of treatment. Leeches, fomentations and poultices, and cold lotions may be applied, not so much with an expectation of preventing altogether the formation of matter—for where you have active inflammation matter is almost sure to form—but rather with a hope of rendering the collection of matter smaller than it otherwise would be. The cavity of the abscess will consequently be much less, provided the inflammation be moderated. Should the phegmounous inflammation of the labia pudendi occur in a weak and irritable patient of very

delicate constitution, this treatment would be too active. If the disease occur in such a constitution, leeches, fomentations, poultices, and evaporating lotions may be tried ; and if the woman be moderately strong, blood may be taken from the arm, but only in small quantity ; the bowels may be kept sufficiently open, and digitalis may also be given in operative doses, but with care, so as to act but lightly on the system, for this remedy is not without risk in such constitutions. When the matter forms, in ordinary cases the abscess may be poulticed and allowed to burst of itself ; but if the woman suffer much from the accumulation of matter, in consequence of the distended state of the skin, I would advise a small puncture to be made in the abscess with a lancet. If the accumulation of matter was large, say half a pint or more, it might be drawn off by little and little, as recommended by Mr. Abernethy. If the general health suffer under the healing of the abscess, it must be attended to, and also the state of the chylopoietic viscera. Support the vascular system by bark, bitters, aromatics, chalybeates, and other similar remedies ; send the patient into the country ; and in general you will find the abscess heals kindly. Should it not be disposed to heal, it might be considered whether the parts should be laid open and allowed to heal from the bottom by granulations : this, however, comes more under the department of the surgeon than the obstetrician.

Blood-vessels occasionally give way in the *labia pudendi* or *nymphæ*, either from injury at delivery, or it may be without any very obvious or adequate cause. From the effusion of blood the labia pudendi and parts adjacent become of an enormous size : it may be larger than a child's head, appearing very black, and giving

rise to excessive pain, from the great distention of the skin. The patient becomes greatly alarmed, more especially if, from the appearance, she suspects mortification. In some of these cases the skin gives way, and the blood may be poured out very copiously; indeed it is said the life of the patient may now and then be endangered by the bleeding; but this is certainly rare. If the bleeding vessel can be discovered, the most effectual remedy would be to apply a ligature around it; but if this cannot be done, then you might plug the vagina with tow, so as to prevent internal bleeding: continued pressure should be made on the part, and the patient kept perfectly quiet. If blood is accumulating in the labia pudendi, and you are called early to the case, the skin remaining unbroken, it may be proper to puncture the parts and discharge as much as possible of the blood in this manner; but this practice is proper only where you are called early, and where you suppose the blood to be yet in a fluid state. If called in an hour after the accumulation has taken place, the blood may have become coagulated, and cannot be expressed. When blood is effused in small quantity into the labia pudendi, you may endeavour to get rid of a good deal of it by absorption: with this view pressure may be made with great advantage, and astringents, in the way of poultices, may be tried: one of the most promising is the lees of port wine mixed with bread-crumbs or linseed-meal, so as to give it a proper consistence: this may be applied to the vulva three or four times a day. Should these means fail, the blood lying in the cellular web may excite a good deal of irritation, and this give rise to inflammation more or less severe, terminating in abscess, on the opening of which the coagulated blood may come out of the aperture in the form of sloughs. These abscesses

may be treated on general principles, at the same time paying every attention to the general health. I believe these cases will ultimately do well, but I have had little experience.

Œdema of the Vulva.—Sometimes you have considerable enlargement of the vulva from œdema: the principal enlargement may be in the labia pudendi, nymphæ, or clitoris, or in all the parts together. This may be independent of swelling of the lower limbs, or you may have them both involved in anasarcaous swellings of no small bulk. If the enlargement is of the labia pudendi, and causes but little inconvenience to the patient, you may endeavour to palliate the evil by a well-adjusted T bandage, bringing it to a full degree of tension, expelling as much of the water as may be out of the cellular web, and thus relieving the patient from much of the swelling. Further, in these cases, purgatives are necessary, and all those medicines which are suited to anasarca. The skin may also be punctured provided the patient is of a vigorous constitution, and will allow it: if the œdematous swelling of the labia pudendi is merely local and unconnected with general dropsy, the probability is, that you may puncture the skin with safety; but if on the other hand this swelling is only a part of general dropsy of the whole body, then puncturing the skin would be attended with some danger—occasionally mortification may ensue. If you do puncture, do not content yourselves with a mere division of the scarf-skin, but carry your lancet down to the cellular web beneath.

Excrescences on the Vulva.—Not unfrequently you have excrescences growing from the vulva; sometimes verrucous, sometimes fleshy, varying very much

in their size, being from the size of a pea to that of the fist.

Treatment.—These excrescences may be removed by caustic, red precipitate, powdered savin, nitrate of silver, &c.—care being taken to apply the caustic to the base of the excrescence. If the excrescence resemble polypi, they may be removed by ligature—if the base is small, the application of the ligature is easy—if large, a needle armed with a double ligature may be carried through the base of the excrescence; the needle being cut away, two ligatures are left to be tied around the base right and left. Extirpation by the knife may be necessary in some cases: let me remark, however, that when the knife is used, you should remove the whole of the diseased structure. These excrescences may be connected with venereal affections, a point always to be investigated; they rarely terminate in cancerous disease: this should be distinctly stated to the patient.

Enlargements of the Nymphæ.—In the Hottentot women more especially, the nymphæ are sometimes so large, that they form a sort of covering to the vulva; our own females, however, are also occasionally liable to this defect. There are two kinds of these enlargements: sometimes the nymphæ increase in size without altering in organization, so that their remote structure may remain healthy enough, only their growth is morbid. In other cases there is a total change of organization, the parts becoming converted into a sort of schirrous mass.

Treatment.—The larger growths of the nymphæ should, I presume, be removed by the knife, but when the growth is small, a pair of scissars will answer the purpose, and by a single cut you may re-

move as much of the nymphæ as may be necessary to reduce them to their natural dimensions. Ligatures in general are not required, for although there are many vessels in this part, yet they are small; and if pressure be made on the part with the thumb and finger for ten or fifteen minutes, the hemorrhage will cease. The enlargement of the nymphæ I suspect may be connected with venereal disease; you will do well therefore to remember this, and make your enquiries accordingly, but enlarged nymphæ do not prove infection.

Enlargement of the Clitoris.—The clitoris, though partially small, may from disease sometimes enlarge so as to equal the corresponding organ in the male.

Treatment.—If a woman is anxious to have this defect of the genitals remedied, provided there is no change in the organization of the part, but merely an increase of the bulk, I presume that by means of the knife, the exuberant structure might be readily and safely removed. If on the other hand there is a change in the organization of the part, the clitoris sometimes becoming converted into a schirrous mass, with irregular surfaces, disposed perhaps to malignant ulceration, the part may be removed by the knife, but with less chance of success. When you are operating, more especially if there is disease of the base, it should be your object to remove the whole of the disorganized mass.

Obstructions of the Orifice of the Vagina.—Women are liable to be affected with partial obstructions of the vaginal orifice: either the hymen is merely cribriform, or although of the usual circular or crescentic shape, it obstructs the orifice, which may be of small diameter, very completely. This obstruction gives rise to various incidents, worthy of a little considera-

tion. In the first place, when the catamenia occur, they are liable to become very offensive from their detention in the vagina. The disease once understood is easily relieved by the use of the syringe and warm water three or four times, and the natural dilatation of the orifice will ultimately complete the cure of the disease. Another consequence of this obstruction in the genitals is, that if the hymen be firm and the patient too sensitive, the male organ may not penetrate the vagina: or if the obstruction be of the higher degree, suppose the hymen, or whatever causes the obstruction, to be unusually firm, and the parties resolute, the male organ may actually enter the urethra. A case of this kind is related by Champon, and in this case the woman suffering a great deal of pain, on her marriage is seized with incontinence of urine, and after no long time, perhaps, obliged to separate from her husband, though the disease, when properly understood, may, with the help of a little surgery, be relieved at once.

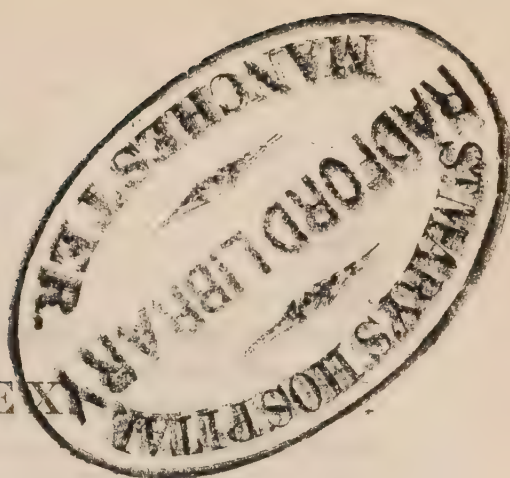
There are two causes for these obstructions—the hymen may be either unusually firm and strong, or when the hymen is healthy, constriction of the upper part of the vagina may occur as if a thread was passed round and partially closed it as a ligature; a defect readily detected by a little examination, and admits of effectual relief. When intercourse is in this manner obstructed, and the male organ does not enter the vagina, the consequence is not necessarily sterility, for so powerful is the fecundating principle, that impregnation may take place, and that in a short time. In Chambon's case, where the parties separated not long after marriage, the hymen contained only two small apertures large enough to admit a probe, yet nine months and a fortnight after marriage, the girl

was delivered of twins. Though, however, sterility is not a necessary consequence of partial closure, yet unless the woman is very apt to produce children, I believe it may occasion a delay of the impregnation : you may set down therefore among the effects of partially-obstructed genitals an impediment to conception. A lady, the wife of a medical man, after having been married some years, and producing no children, observed an enlargement of the abdomen, with swellings of the legs, and her health becoming much impaired, became alarmed at these symptoms, and was advised to retire to Bath with a view to the restoration of her health. She went there, but found no improvement, the abdomen continuing to get larger, and her health still on the decline ; she determined to return to town : on her way back she was seized with abdominal pains, and the woman at whose house she was having had children herself, became satisfied that these pains were no other than those of labour. An obstetrician was sent for, when it was ascertained that the patient was pregnant and laboured under cribriform hymen which partially obstructed the genitals. Now in this case, as in that of Chambons's, impregnation was accomplished, but not as in the French girl, speedily ; for, as before stated, the impregnation was delayed several years in consequence of the obstruction ; and here it may be observed, by way of inference, that whenever intercourse is impeded or sterile, we ought by all means to inquire into the state of the hymen, for it not unfrequently happens that from the strength of this membrane, and the sufferings which may arise from pressure, the designs of nature are frustrated, and not unfrequently the male imputes to his own want of power what, in a good measure at least, is to be ascribed to the timidity, sensibility, and over-

firmness of the female. The most effectual and natural cure is impregnation, which I know may sometimes, perhaps often and speedily, be accomplished without menstruation, for if one impregnation occurs, the passage at birth will be sufficiently dilated ; it is also easy to enlarge the passage by other means. With this remark I finish the course.

FINIS.

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FINIS.

ERRATA.

Page	line	
7	13	<i>for the measure, read the long measure.</i>
8	21	„ molles ossium, „ mollites ossium.
7	21	„ immediate, „ intermediate.
6	11	„ inflammation may „ inflammation which may
13	16	„ in, „ or
19 last line		„ the Greek letter Δ „ Δ
20	4	„ petrous, „ squamous.
23	5	„ natural, „ natal.
		For auxillæ, where it occurs, „ axillæ.
		For chord, where it occurs, „ cord.
		For dilitation, where it occurs „ dilatation.
		For syst, where it occurs, „ cyst.
73	30	„ Secondly. Variety, „ the second variety.
82	20	„ emulsion „ emulsion.
121	21	„ before, „ below.
125	34	„ in, „ on.
136	21	„ in, „ of.
166	33	„ this, „ the
232	3	„ lutea, „ luteum.
237	5	„ its cavity, „ their cavities.
238	24	„ must be, „ must not be.
238	33	„ whom had „ whom she had.
299	22	„ diagnosics „ diagnosis.
305	29	„ cotoledons, „ cotyledons.
333	35	„ coapivi, „ copaiva.
334	4	„ „
360	9	„ helebore „ hellebore.
372	6	„ stricture, „ structure.
383	13	„ partially, „ naturally.



